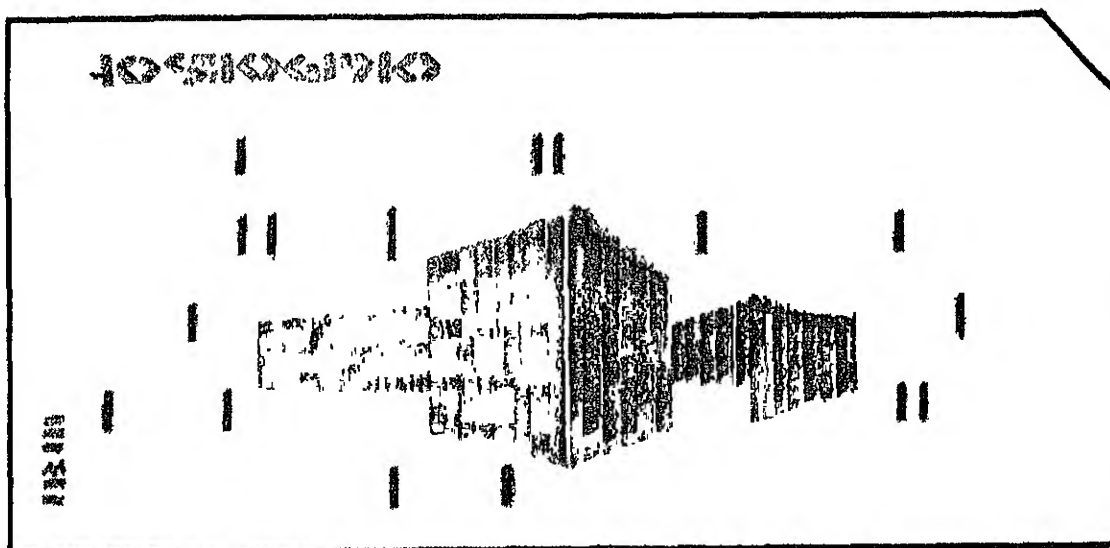




HOSPITAL FACILITIES SERIES  
HOSPITAL FACILITIES

organization  
administration

# HOSPITAL ADMINISTRATIVE RESEARCH



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
Division of Hospital and Medical Facilities  
Washington, D.C. 20201

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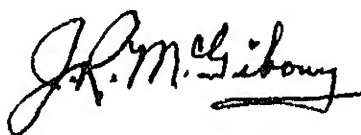
## FOREWORD

Advances in clinical medicine have, in large measure, resulted from intensive research, for which the hospital has been the primary locus. Moreover, the hospital provides the most appropriate setting for the application of such research findings.

If optimum use is to be made of clinical research accomplishments, concomitant attention should be directed to study, evaluation, development, and application of improved measures in hospital planning, design, organization, and management of health and medical services, all of which form the framework of administration.

Material presented in this publication describes some of the activities, as a part of the Hill-Burton Program, which are contributing to progress through hospital administrative research.

An annotated list of research and demonstration projects sponsored by the Hill-Burton program is presented in the last chapter of this report. Included in this listing are publications resulting from these studies.

A handwritten signature in dark ink, reading "J. R. McGibony". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

J. R. McGibony, M.D.  
Chief, Intramural Research Activities  
Division of Hospital and Medical Facilities.



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# INTRODUCTION

Research has long been recognized as one of the primary functions of the hospital. Although a major portion of this research, over the years, has been focused on clinical sciences resulting in spectacular contributions to human welfare, of particular importance, also, is that aspect of research relating to hospital administration, which is essential for full effectiveness.

Since many hospitals have limited resources and trained staff, in many instances extensive research is carried out in universities and teaching hospitals associated with medical schools. Nevertheless, every hospital has a stake in promoting and utilizing the results of both clinical and administrative research aimed at promoting better patient care as well as greater economy and efficiency in community service.

Hospital administrative research, for the purpose of this document, refers to studies in planning, organizing, implementing, coordinating, and evaluating health, hospital, and medical care programs, facilities, and services. It may be basic or applied.

A major emphasis in the Hill-Burton program has been in applied research, often referred to as developmental or operations research. The terms are used somewhat interchangeably, each being directed toward a practical application of knowledge and understanding. Such activities are designed to remedy a specific defect, or to improve upon an already existing system through development and application of useful materials, devices, or systems.

There is equal need for basic research in the hospital field. The hospital environment is accustomed to the conduct of research and to the application of research findings. And, for most physicians, the hospital represents a center they respect for education and for consultation.

If hospitals are to develop their total potential for leadership and discharge their full responsibilities for health services to the community, it is necessary that there be continuing studies, experiments, applied research and demonstrations related to needs, resources, and methods. Such programs help provide the much needed answers to many questions. Finding such answers *now* will enable more hospitals to more effectively meet the needs of patients and the challenges of a sophisticated public, preoccupied with efficiency, which increasingly expects hospitals to become the chief community focus for an integrated health program.

## *Chapter I*

# RESEARCH IN THE HILL-BURTON PROGRAM

Research has long been a major concern of the Public Health Service. As early as 1887, a research unit, the Laboratory of Hygiene, was established on Staten Island, in New York Harbor. The various bureaus and divisions of the Service vary in mission and objectives as they relate to the nature of their respective research functions, reflecting dominant rather than exclusive characteristics.

A point of convergence and overlap frequently occurs between research to develop new health knowledge and research to find more effective application of health knowledge in providing community services. The fundamental guideline in determining research support lies in the degree to which the research proposed will contribute specifically and directly to identified program objectives of the respective institutes and divisions.

In 1946, Congress added to the responsibilities of the Public Health Service what has become known popularly as the Hill-Burton program to be administered by the Division of Hospital and Medical Facilities, a unit of the Bureau of State Services. Purposes of the act were "to assist the several States to inventory their existing hospitals, to survey the need for construction of hospitals, and to develop programs for construction of such public and other nonprofit hospitals as will, in conjunction with existing facilities, afford the necessary physical facilities for furnishing adequate hospital, clinic, and similar services to all their people," and "to assist in the construction of public and other nonprofit hospitals in accordance with such programs . . ."

Since the enactment of the law until March 1964, Hill-Burton construction projects represented a total investment of \$6,523,000,866 of

which \$2,070,574,730 was the Federal share. The 7,118 projects have added 302,656 beds and 2,003 public health units.

Of comparable importance in its impact, although involving substantially less funds, has been the effects of a 1950 amendment to the law. It had been forcefully demonstrated that the provision of beds alone did not go very far in "furnishing adequate hospital, clinic, and similar services" to all the people. The amendment attempted to correct this, and added as a basic declaration of purpose of the law, the authority to "conduct research, experiments, and demonstrations relating to the effective development and utilization of services, facilities, and resources of hospitals or other medical facilities and, after consultation with the Federal Hospital Council, to make grants-in-aid to States, political subdivisions, universities, hospitals, and other public and private nonprofit institutions or organizations for projects for the conduct of research, experiments, or demonstrations relating to the development, utilization, and coordination of services, facilities, and resources of hospitals or other medical facilities, agencies, or institutions, and including projects for the construction of experimental or demonstration hospitals or other medical facilities and projects for acquisition of experimental or demonstration equipment for use in connection with hospitals or other medical facilities."

The amendment authorized an appropriation of \$1,200,000 annually, but no funds were made available until 1956. In 1961, another amendment increased the authorization to \$10 million annually. Since 1956, more than \$25 million have been expended under this authority.



Funds available under these authorizations have helped stimulate activity in hospital research, resulting in a deeper awareness of the necessity for further explorations and development. In carrying out its responsibility to have funds expended wisely and logically, the Division requires that evaluation be built into every project. Aid is also offered, through monitoring projects and through administrative support, where necessary, in an attempt to

produce the best results from efforts and funds expended.

In awarding grants for research studies and demonstration prospects, the Division provides an opportunity not only for the attainment of new knowledge but also for its utilization by methods which show the usefulness of newly found information. This furnishes a link between research findings and their practical application.

## TYPES OF GRANTS

Funds appropriated for research studies and demonstrations are used on both an extramural and intramural basis. There is often an interrelationship, as necessary, for full effectiveness. Public and private nonprofit institutions and groups, including political subdivisions, are eligible to apply for such funds.

### EXTRAMURAL ACTIVITIES

*How to Apply.*—Application for grants is made on Form PHS-398, Application for Research Grants. These forms may be obtained from the Division of Hospital and Medical Facilities, U.S. Public Health Service, Washington, D.C., 20201, or from the Division of Research Grants, National Institutes of Health, U.S. Public Health Service, Bethesda, Md., 20014.

Applicants provide information concerning the nature of the research; methods of procedures; significance of the research; and previous work done on the project. Biographical sketches of professional personnel and a proposed budget are also required.

Panels of knowledgeable experts review the applications. These special review committees and study sections include outstanding authorities in the major fields of research. They evaluate the project with respect to the following criteria: Technical quality (objectives must be clear, realistic, and possible of achievement); extent to which the project would contribute to the development of new knowledge and techniques for improving hos-

pital service; availability and adequacy of resources needed to carry out the project; and reasonableness of the cost estimate and proposed budget. In addition, the qualifications of the principal investigator merit attention. The Federal Hospital Council considers the recommendations of the Study Section before presenting its report to the Surgeon General for final action.

Full academic freedom is preserved and the end product is the property of the researcher, except that special arrangements are required relative to copyrights and patents. Also, if Federal funds defray costs of publications, proceeds from sales revert to the Government. Details concerning these aspects are given in the notification of project approval.

*Information Requests.*—While the Public Health Service provides extramural grants, the projects are the responsibility of the sponsoring institution; therefore requests for information should be directed to the project's principal investigator.

*Site Visits.*—In all of the grant categories, site visits are often made to proposed projects by representatives of the Public Health Service and outside consultants, to help evaluate the goal of the project and how it is to be achieved. Changes in the structure may be suggested before a project is approved. These visits are continued periodically during the course of the project. Principal investigators report on progress being made and, if needed, are given administrative support to complete their studies successfully.

## *Types of Projects*

Projects cover a wide spectrum of activities under three major classifications:

### *1. Research and studies*

Grants may be made for basic research in the biological, social, and physical sciences for projects aimed at resolving hospital and medical facility problems. They also may be made for applied research directed toward the use of the scientific method to improve, correct, develop, and test forms or organization, internal management, and other practices in hospitals and medical facilities.

Also included under the research and studies category are the following:

- Descriptive studies, largely quantitative, in defining or illuminating an area of interest. Examples include demographic, epidemiological, and attitudinal studies developing factual information to meet research needs.

- Exploratory or pilot studies developing new methods of research in the field, or testing unorthodox approaches and ideas under conditions which afford a substantial degree of freedom.

- Projects aimed at expanding the total health facility research effort. These are of two types: (a) relatively small grants of "seed money" to institutions having potential for health facility research, and (b) grants to established investigators and in institutions having ongoing programs in order to provide broader opportunities for research experience and training.

### *2. Experimental design and construction*

Grants under this category are made for designing, constructing, and equipping physical facilities which, in themselves, are experimental.

A grant may be given only for that portion of a facility shown to be of an experimental or demonstration nature; i.e., space, facilities, and equipment determined to be reasonably attributable to the experiment. Facilities of a conventional nature, but in which research activities or services are to be undertaken are not eligible.

The project must have sound and feasible plans for evaluation, an important consideration in reviewing applications. Federal share

of the funds may not exceed two-thirds of the eligible costs; payments are usually made in installments, consistent with construction progress.

### *3. Service demonstrations*

Projects in this category cover a wide range of subjects including the following:

- Demonstrations designed to reduce the lag between the development and adoption of improved techniques and methodologies, for planning health facilities, and for improvements in the practices, procedures, and patterns of organization and operation of health facilities.

- Demonstrations embracing those situations wherein a procedure, practice, method of service, or piece of new equipment having been tested and found useful under one set of conditions, is tested for usefulness in other situations.

- Demonstrations in areawide planning by planning agencies (local, State, or regional) and organizations (State Hill-Burton agencies and State hospital associations) assisting in establishing planning areas. Grants to planning groups are usually made for one or more of the following purposes:

- (a) To provide financial support for the initial years of operating newly organized local planning agencies;

- (b) To assist established areawide planning groups to expand the scope of their activities; and

- (c) To assist established areawide planning groups to expand their geographic areas of jurisdiction.

Problems facing hospitals today, such as ever expanding health needs, demands, and programs; availability of resources; improper utilization; rising costs; personnel shortages; lack of services or facilities; obsolescence, changing population, cultural, and economic patterns; and organization for health services, all can be at least partially solved by sound community and areawide planning.

Regional and coordinated plans are being developed to project the needs of regions for hospitals and related health facilities and services (including outpatient) to be met at a future target date; to plan their orderly dis-

tribution by type and area within the region; to project financial resources for services and for capital construction; and to develop priorities for new or expanded services, for modernization, and for new construction consistent with community need.

## INTRAMURAL ACTIVITIES

These activities cover research, studies, and demonstrations conducted by members of the staff of the Division of Hospital and Medical Facilities; also, to meet specific needs, contracts with outside agencies and individuals, as extension of Division activities, are arranged.

Division staff members, in order to discharge their functions and responsibilities, require a great deal of information. A number of staff members, therefore, devote a portion of their time to developing studies and collecting necessary data. When the subject area or scope is beyond their resources, contractual arrangements can be made for development and delivery of the needed material, which becomes the property of the Public Health Service.

## PRIORITIES

The widespread ramifications and complexity of the hospital field make establishment of appropriate criteria exceedingly difficult. Examples of factors which complicate the development of acceptable criteria involve general public health, clinical medicine, the broad field of administration, economics, sociology, psychology, education, architecture, engineering, and basic and applied research methodology.

Since hospital administrative research is a relatively new field, time has not permitted

development of a sufficient number of competent personnel and coordination of thought and effort among the many disciplines involved.

Accelerated and continuing efforts are indicated to define goals and push toward firm documentation, analysis, and evaluation of relative importance in relation to areas, needs, demands, methods, interests, competencies available, and practical application. Even though arbitrary and somewhat academic, criteria as broad guidelines would be useful. Universal acceptance is less important than exchange of thought and continuing evaluation.

As a point of departure for discussion, and emphasizing that the *patient* is paramount in each, the following groupings have been suggested:

- *Communications*, in its broadest concepts.
- *Utilization* of health, hospitals, and medical care resources.
- *Planning* of programs and facilities for development of needed resources and improved utilization.
- *Design, construction, and equipment* of new and modernized facilities.
- *Organization* of programs and services.
- *Administration*, general, in its broadest ramifications, including coordination, departmental and specialty organization and activities.
- *Personnel* and personnel management in all their phases.
- *Costs* and general economics.
- *Quality* of care evaluation.

## *Chapter II*

# AREAS OF NEEDED RESEARCH, STUDIES, AND DEMONSTRATIONS

While research and demonstration activities sponsored by the Hill-Burton Program have thus far been gratifying, existing and constantly developing new challenges require extended and renewed endeavors, particularly in certain areas. Thus, the efforts of those in many fields and disciplines must be intensified in virtually all the sciences, if health and hospital services are to meet needs and demands in an effective and economical manner, consistent with concepts of the highest quality within the limits of available resources.

This chapter presents selected examples of areas in which further exploration might prove useful to the hospital and related fields. The list is not intended to be comprehensive or restrictive, but it is hoped that the discussion will stimulate the formation of more ideas, interest, and renewed efforts in research, studies, and demonstrations.

### COMMUNITY PLANNING

Planning of health facilities and services has been an integral part of Hill-Burton activities since the program's inception. Grants for community planning have increased greatly in recent years. Their purpose has been to maintain and elevate the quality of care by stimulating improved services, by promoting the construction of needed facilities, and by correcting deficiencies in existing facilities. Better coordination of efforts is needed to eliminate waste in providing services and to prevent construction which does not conform to needs.

Areas which require continuing attention include:

### AREAWIDE PLANNING

- Planning of services, hospitals, and related facilities for suburban areas due to rapid population growth. The suburbs often require diagnostic facilities and, in some cases, facilities for inpatient care. Research should probe the possibility of constructing facilities as satellites of already established central city hospitals.

- Methods of meeting population requirements for general, chronic, tuberculosis, and mental disease hospital services and methods of providing these services.

- Outpatient needs, services, utilization, and trends.

- General health patterns, health status of the community, and general public health programs available.

- Community acceptance and utilization of hospital services.

- Regional planning for personnel recruitment, training, and educational programs and resources.

- State and local programs for hospital services including payment for indigent care.

- Related mental health needs, facilities, and resources in the light of the dynamic changes in community attitudes and programs of care for the mentally ill.

- The need for rehabilitation centers and resources for treating certain types of physical and mental disabilities.

- The role of the hospital in Civil Defense, including emergency expansion of facilities.

## COOPERATIVE PLANNING

- The need for coordination and closer working relationships between the medical profession and hospital and health facilities.
- Relationship of diagnostic clinics to hospitals.
- The effect of home care and community nursing on hospital needs and activities.
- The patterns and trends of group practice.
- Hospital-patient relationships, including attitudes, and the physical, social, psychological, and economic impact on the patient and family.
- The role and effectiveness of local hospital associations and the impact on the coordination of hospital services.
- The interrelationships between the services provided by hospitals, related health facilities, and community health agencies.
- Need for regional, area, and local planning groups.
- Wider dissemination of concepts and techniques of health facility planning throughout the field.
- Methodology for coordinated health facility planning.
- The most effective role of the chronic disease unit of a general hospital as contrasted with services in a nursing home.

## UTILIZATION PLANNING

- Effect on general hospital utilization of variations in availability of long-term care facilities.
- The problem of small hospitals in a large city.
- The effectiveness of the various sporadic and circumscribed utilization studies. These studies should be evaluated in respect to such facets as methodology, demography, social and cultural factors, public health, economics, educational levels and programs of the community,

physicians, research programs, and relationship to needs and effective demand.

- The attitudes and perceptions of physicians regarding the role of the hospital and how hospitals should be utilized.
- The attitudes and perceptions of the public regarding services expected in the hospital.
- Utilization rates under varying patterns of medical care.
- Length of stay, by condition or diagnosis of the patient, in relation to the specialty and training of physician.
- Methods of remuneration of the physician, and their possible effect on utilization policies, particularly prior to hospitalization.
- Medical evaluation of hospitalized patients at a given time.
- Systematic collection of basic data from many hospitals, so that individual hospitals could measure their own performance against the statistics of others.
- Medical criteria for hospital admission.
- The functions and duties and effectiveness of hospital utilization committees.
- Planning and utilization of facilities providing care in day and night hospitals, half-way houses, outpatient departments, and other such facilities for mental health.
- Planning and utilization of facilities for mentally retarded, particularly for facilities for day and residential care and related community programs designed to express the new program concepts recommended in the report of the President's Panel on Mental Retardation.
- Planning and utilization of Group Practice facilities and the development of the group practice of medicine and dentistry and of comprehensive prepaid medical and dental care plans.
- Measures for determining need for various types of health facilities.
- Means of achieving balanced urban hospital resources and minimizing duplication of facilities within communities.

## DESIGN, CONSTRUCTION, EQUIPMENT

### GENERAL

- Evaluation and development of planning guides for the construction of physical facilities, and for equipment and supplies, all essential to safe and economical operation of hospital departments, such as anesthesiology, radiology, pathology, laboratory, pharmacy, dietary, medical records, patient units, emergency, maternity, and outpatient services.

- How equipment needs can best be met to eliminate inefficiency and waste and reduce overall cost; problems of maintenance, particularly of expensive complicated modern equipment.

- Modernization and replacement needed to adapt obsolete facilities to changing functions and to modern practice.

- The need for better design and construction of facilities for short- and long-term general, tuberculosis, and mental hospital services in the community.

- Design and construction of day hospitals, facilities for mentally retarded, halfway houses, outpatient departments, and other such facilities for mental health.

- Special design considerations for facilities in fast-growing suburbs, in certain sections of metropolitan areas occupied principally by minority groups, and in many rural areas.

- Design features of public health centers and other outpatient facilities which provide preventive and ambulatory care.

- Development of an integrated program for all types of facilities and services within an urban area, according to a community plan.

- Design and construction of schools of medicine and other institutions for the training of the health professions.

- Guides for constructing long-term care facilities and renovating obsolete institutions.

- The need for improved functional design of structure for maximum efficiency and to permit easy adaptation to techniques developed from application of new knowledge.

- Equipment and supply needs for rendering dental services in the hospital.

- The need for change in hospital design as a result of automation process in various departments.

### ENGINEERING

- Demonstration construction projects for various hospital services, e.g., laboratory, surgery, pharmacy, central supply.

- Methods to reduce infection through design of most efficient housekeeping equipment for hospital use.

- Space requirements, including floor plans and traffic flow, for various services in the hospital.

- Food refrigeration and methods of food storage.

- Equipment standards and specifications for laundry, housekeeping, and medical services in the hospital.

- Considerations relating to age, type of structure, fire-proofing of hospitals.

- Environmental engineering, to determine, evaluate, and solve major problems characteristic of the hospital surroundings, including heating, lighting, ventilation, fire safety, plumbing, and acoustics.

## ORGANIZATION AND ADMINISTRATION

Research required in administration and organization may be grouped under four headings: (1) Policies, general structure, and functions of hospital management; (2) cost accounting and those procedures concerned with the financial operation of the hospital; (3) automation and data processing; and (4) personnel management.

Two examples of approaches to some of these problems include "Systems Analyses" and "Operations Research." Operations research is a problem-solving approach to management characterized by the development of methods for determining the relative profitability of alternative courses of action. Mathematics, economics, and statistical models of business problems are used in developing these methods.



In technology, the advent of automation has unfolded unlimited possibilities, its focal point being the application of the analog and digital computers to the automation processes. The realization that the potentials of the computer in relation to problems in administration have only begun to be tapped makes it evident that future research is necessary. In the field of hospital administration these developments will continue to have considerable importance.

Areas requiring further research include:

#### POLICIES, GENERAL STRUCTURE

- More effective hospital organizational patterns.
- Standards for evaluation of organization and administration, including board of trustees.
- Communications within and among hospitals; an evaluation is needed showing the importance and present status of the communications process, transmission, reception, interpretation, feedback, content, analysis, response, behavior theory, authority, organization (formal and informal), and the devices of communications.
- Facets of hospital operations where there may be a potential savings, and application of results to development of more efficient methods of administration.
- Characteristics and effectiveness of governing boards of hospital by size, type of control, composition, ages of board members, tenure of office, and other factors.
- Characteristics of medical staff organization.
- Legal and professional aspects, requirements, and responsibilities in the field of medical and surgical services.
- Introduction and use of social science approaches, methods, and instruments in hospital administrative research.
- Development of internal controls in business management functions of hospitals.
- Admitting practices and procedures.
- Guides and methods for uniform reporting, financial and statistical, for hospitals and related facilities.

- Legal aspects of hospital administration, taxation, licensure, contractual agreements, and obligations.

- Criteria by which administrative department performance may be evaluated.

- Content and frequency of administrative department reports.

- Centralized administration in rural hospitals.

- Human relationships and characteristics of the hospital organization.

- Hospital services with regard to:

- a. organizational structure to determine most efficient methods to achieve goals of patient care; and
- b. efficiency of operation.

- Methods of administrative research, including:

- a. proper statistical procedures: data processing, compatibility;
- b. information retrieval and utilization of material;
- c. basic types of research and what constitutes research; and
- d. new techniques and procedures of research.

- Conditions that influence acquisition, acceptance, and implementation of health-related information, particularly results of hospital administrative research.

- Barriers to effective communication findings, such as cultural, social, and psychological resistance to various types of communication, and to certain sources and channels of information.

#### COSTS

- Volume and cost of hospital inpatient and outpatient care to indigent patients.

- Methods for conducting effective management audits.

- Guides for purchasing, credit, and collection functions.

- Medical and nursing teaching costs and their relation to total hospital economy.

- Problems of financing hospital and related services.

- The cost of medical program development and operation.

- Hospital health insurance leading to the development of improved insurance benefits for the population.

- Hospital charges and costs by department.

- Hospital income sources.

## AUTOMATION AND DATA PROCESSING

- Utilization of automation in all departments of the hospital and its potential usefulness in possibly decreasing hospital costs while increasing efficiency.

- The uses of electronic equipment in hospitals, its limitations, dangers, and pitfalls as well as values.

## PERSONNEL

Some aspects of the personnel field needing further attention are:

### *Policies*

- a. Development and implementation of policies.

- b. Impact of innovation of new policies and procedures on employees.

- c. The many faceted role of human relations in patient care and in the hospital organization.

### *Job Analysis*

- a. Formulation of improved job analysis and descriptions to permit better uniformity in job requirements for all departments in the hospital.

### *Qualifications*

- a. Determination of education, experience, and other attributes and character necessary in employees to successfully perform the job, for the benefit of patients, the hospital, and for personal growth and satisfaction.

### *Recruitment*

- a. Sources of personnel.

- b. Methods of attracting competent persons to the hospital field by individual and collective action.

### *Employment and Placement*

- a. Improved procedures for hiring and placing employees for maximum benefits.

### *Orientation and Training*

- a. Evaluation of health career programs now in effect.

- b. Analysis of employee orientation and training programs and development of guide materials.

- c. In-service training programs.

- d. Training of supervisors to carry out objectives, policies, and practices of the hospital.

- e. Retraining of personnel as a result of automation.

- f. Programs to provide training of competent researchers.

- g. Training of research administrators in an effort to augment the sparse field of properly trained researchers.

### *Supervision*

- a. Supervisory needs, methods, techniques, human relations aspects, evaluation.

- b. Effect of supervisor on effectiveness and morale of employees.

### *Utilization*

- a. Work conditions and schedules.

- b. Effective staffing patterns and ratios.

### *Evaluation*

- a. Standards of performance for employees.

- b. Appraisal of professional and technical abilities, attitudes, and morale of employees.

### *Personnel Administrative Management*

- a. Organization.

- b. Costs (wage rates, recruitment, training).

- c. Turnover and absenteeism problems.

- d. Health and safety programs for employees.

## SERVICES

Additional studies needed in clinical, administrative, and related services include:

### GENERAL

- Methods used in appraising medical care and nursing care service.



- The role and effectiveness of local hospital associations and the impact on coordination of hospital services.

- Patient needs in medical-surgical field to develop standards of safer and more beneficial patient care.

- Legal and professional guides to requirements and responsibilities in the field of medical-surgical services.

- Hospital responsibility in group practice.

- Determination of optimum size of clinical departments and services.

- Criteria by which clinical departments may be evaluated.

- Content, character, and frequency of clinical department reports.

- Responsibility of the hospital in caring for such patients as alcoholic and drug addicts.

- The effect of Progressive Patient Care on hospital organization and services.

#### SPECIFIC

- The emotional and physical effects of anesthesia on patients in pre- and post-operative preparation and care.

- Hospital dental services in relation to needs and clinical, technical, and administrative problems.

- The role of the health educator in the hospital.

- Policies, procedures, techniques, and equipment standards such as those covering public health laboratories.

- Plans, equipment, personnel requirements, and administrative procedures for organizing and maintaining blood banks.

- Types of medical record systems now in use. Medical record guides should be developed especially for small hospitals, health centers, clinics, and outpatient departments.

- A uniform and simplified method for keeping medical records.

- Use of automation and computers in medical records.

- Effects of medical social service on the length of illness and hospitalization, the recovery of patients, and medical and social adjustments following illness.

- Various aspects of hospital pharmacies including standard levels of service, operations, drug costs, personnel, equipment; and space required. A selected group should be studied to determine the minimum size and type of hospital which can do mass compounding and efficiently manufacture parenteral solutions. Studies are also needed to determine effective measures for reducing the medication cost to the patient. Criteria for establishing an active pharmacy committee, simplified formulary, purchasing, storage, inventory, and control of drugs.

- Availability, utilization, and costs of outpatient services and how they can be improved.

- Treatments in physical medicine by types, number, and professional qualifications of personnel providing them in general and specialized hospitals of varying sizes.

- The organization of the physical medicine department in hospitals and health centers.

- Utilization of physical therapy and occupational therapy departments.

- Examinations and treatments by number, type, and professional qualifications of personnel administering them in general and specialized hospitals of varying sizes.

- Psychiatric inpatient care unit to determine utilization of this service; characteristics of patients, age, sex, and method of payment.

- Methodology for evaluating work load in radiology department. Development of schematic plans, equipment, personnel requirements and administrative procedures for radioactive isotope services.

## Chapter III

# RESEARCH PROJECTS

This chapter presents a catalog of research projects that have received financial support from the Division of Hospital and Medical Facilities.

Subject areas have been grouped under four major headings: Community Planning, Design and Construction, Organization and Administration, and Services. The list includes research studies, experiments, and demonstrations relating to the social, administrative,

clinical, organizational, and physical-structural aspects of hospitals and related medical facilities, including both extramural and intramural projects. Of necessity there is some overlapping of topics since the subject areas are by no means mutually exclusive.

The list of projects, including publications resulting from the studies, follows:

(HM denotes extramural projects; I denotes intramural projects)

## COMMUNITY PLANNING

### AREAWIDE PLANNING

HM-00014

*Hospital Health Facilities for  
Major Urban-Suburban Area*

PRINCIPAL INVESTIGATOR: W. D. Bryant, Ph. D.; Executive Director, Community Studies, Inc.; Kansas City, Mo.; activated April 1, 1956; completed June 30, 1959.

A master plan for a base hospital center (Kansas City) and its service region (Kansas and western Missouri) in relation to the needs and resources of this geographical area and the development of means for effective coordination of resources.

#### *Publications:*

Lembcke, Paul A.; Hermansen, D. R.; and Poland, Eleanor. "A Proposed Standard Method of Measuring Hospital Capacity." *Public Health Reports*, 74: 674, August 1959.

Poland, Eleanor and Lembcke, Paul A. *Delineation of Hospital Service Districts: A*

*Fundamental Requirement in Hospital Planning—Based on a Study of Hospital Facilities and Utilization—Kansas and Missouri.* Publication No. 135, Kansas City, Mo., Community Studies, Inc., January 1962. 117 pp.

Poland, Eleanor; Lembcke, Paul A.; and Shain, Max. *Regional Health and Hospital Study of Kansas Nursing Homes.* Publication No. 129. Kansas City, Mo., Community Studies, Inc., November 1959. 91 pp.

Poland, Eleanor; Lembcke, Paul A.; and Shain, Max. *Regional Health and Hospital Study of Missouri Nursing Homes.* Publication No. 128. Kansas City, Mo., Community Studies, Inc., August 1959. 21 pp.

"Study of Hospital and Nursing Home Needs in Missouri." *Missouri Medicine*, 53: 804, September 1956.

"Survey of Hospital Facilities." *Journal of the Kansas Medical Society*, 57: 487, August 1956.

*Areawide Planning Guide Field-Testing*

Contract with Health Council of Birmingham and Jefferson County, Birmingham, Ala.; activated November 1961; completed December 1962.

A study to test methods of developing areawide plans for a coordinated system of hospitals and related health facilities in a voluntary framework and to discover necessary modifications of known and available techniques.

HM-00042

*Operation of Hospital Planning and License Laws*

PRINCIPAL INVESTIGATOR: Alan E. Treloar, Ph. D.; American Hospital Association; Chicago, Ill.; activated Jan. 1, 1956; completed Mar. 31, 1958.

Project involved an analysis of the provisions, procedures, and administration of State hospital planning and licensing laws; established their relationship to other existing official and voluntary standardizing programs; created criteria for measuring the effectiveness of State planning and licensing programs; developed curricula and content for formal educational courses and inservice training programs.

HM-00021

*Regionalization of Health Care Services Bayamon, Puerto Rico*

PRINCIPAL INVESTIGATOR: Manuel A. Torres Aguiar, M.D.; Regional Coordinator, Director of Research; Puerto Rican Department of Health, Santurce, P.R.; activated June 1, 1956; completed August 31, 1961.

Demonstration project for the regionalization of health services including: (1) The organization, administration, and coordination of health facilities and services, (2) planning of additional facilities and programs, (3) staffing and inservice education for health personnel, and (4) a community relations program through local and regional representation.

*Publications:*

*Operation Regionalization in Puerto Rico*, San Juan, Department of Public Health, Commonwealth of Puerto Rico, 1957. 26 pp.

"A Puerto Rican Experiment in Regionalization." (Editorial) *American Journal of Public Health*, 48: 1210, September 1958.

HM-00031

*Voluntary Planning for Metropolitan Health Facilities*

PRINCIPAL INVESTIGATOR: Alfred L. Frechette, M.D.; Director, Health, Hospitals, and Medical Care Division, United Community Services; Boston, Mass.; activated June 1, 1956; completed Sept. 30, 1960.

A demonstration of regional organization of health facilities and services to develop a profile of community health resources and needs; to formulate an operating program among institutions, services, and programs and to develop an implementation plan.

HM-00105

*Factors Affecting Efficiency of Rural Hospitals*

PRINCIPAL INVESTIGATOR: Verne A. Pangborn; Director, Division of Hospitals, Nebraska State Department of Health; Lincoln, Nebr.; activated May 1, 1959; completed Feb. 28, 1963.

Study of Nebraska's needs for hospitals and medical and public health facilities; also explored the principles of community planning and sound techniques of community development as they relate to these needs.

*Publications:*

Kurtz, Richard A., and Saathoff, Donald E. "Cost Per Day Comparisons Don't Do the Job." *The Modern Hospital*, 99: 14-16, 162, October 1962.

Kurtz, Richard A., and Saathoff, Donald E. *Functional Analysis: A Study of Function Performance by Personnel in Seven Small Hospitals*. Lincoln, University of Nebraska, December 1, 1961. 53 pp.

Kurtz, Richard A., and Saathoff, Donald E. *Nebraska's Short-Term General Hospitals*,

1961: *An Analysis by Bed Size Categories*. Lincoln, University of Nebraska, Mar. 1, 1962. 32 pp.

Kurtz, Richard A., and Saathoff, Donald E. *The Hospitals of Nebraska*. Lincoln, University of Nebraska, 1960. 21 pp.

Saathoff, Donald E., and Kurtz, Richard A. "What Administrators of Small Hospitals Do." *The Modern Hospital*, 99: 85-88, August 1962.

HM-00127

*Hospital—Community Relations and their Determinants*

PRINCIPAL INVESTIGATOR: Milton I. Roemer, M.D.; Director of Research, Sloan Institute of Hospital Administration, Cornell University; Ithaca, N.Y.; activated Feb. 1, 1959; completed Oct. 31, 1963.

An evaluation of the attitudes of communities to hospitals based upon a series of specific criteria of activity and performance, both internal and external.

*Publications:*

Elling, Ray H., and Halebsky, Sandor. "Organizational Differentiation and Support: A Conceptual Framework." *Administrative Science Quarterly*, 6: 185-209, September 1961.

Elling, Ray H. "What Do We Mean by Hospital Support?" *The Modern Hospital*, 96: 84, January 1961.

Roemer, Milton I., and White, Rodney F. "Community Attitudes Toward Hospitals." *Hospital Management*, 89: 37-39, January 1960; 89: 48-49, February 1960.

HM-00184

*The Hospital: A Comprehensive Community Health Center*

PRINCIPAL INVESTIGATOR: C. Rufus Rorem, Ph. D.; Executive Director, Hospital Planning Association of Allegheny County; Pittsburgh, Pa.; activated Oct. 1, 1960; completed Sept. 30, 1963.

A study and appraisal of the programs of institutions which exemplify the various features of a community health service center.

HM-00202

*Distribution of Hospital Facilities in Urban Regions*

PRINCIPAL INVESTIGATOR: Gerald A. P. Carrothers, Ph. D.; Vice President, Science Research Institute; Philadelphia, Pa.; activated Sept. 1, 1961; completed Aug. 31, 1962.

Plan to develop and apply techniques and principles of regional analysis in determining efficient distribution of hospital and related facilities in metropolitan regions.

HM-00207

*A Demonstration for Planning Urban Care Facilities*

PRINCIPAL INVESTIGATORS: Helen L. Knudsen, M.D., M.P.H.; Director, Division of Hospital Services; and William C. Harrison, M.D., M.P.H.; Director, Division of Local Health Administration; Minnesota Department of Health; Minneapolis; activated May 1, 1962; completion date: Apr. 30, 1964.

Project to derive significant baseline data to be used in developing sound, long-range planning for comprehensive health facilities and services in Minnesota. Such factors as available services, patient utilization, and projected needs based on population changes are being studied in the light of the advances in medical and hospital care, current methods of payment, and increased use of all types of care facilities.

HM-00208

*Demonstration of a Statewide Organization for Health Facilities Planning*

PRINCIPAL INVESTIGATOR: Lester E. Smith, Ed. D.; Director of Education, Blue Cross-Blue Shield; Topeka, Kans.; activated May 1, 1962; completion date: April 30, 1965.

Project to develop an organization and mechanism for the regular collection, analysis, and use of specific information relative to hospital and related facility planning, utilization, and costs on a statewide basis. This includes the selection of criteria data, methodology development for collection of data, and the establishment of a program for the development of local planning groups in areas of regional services determined by the study.

HM-00233

*Service Demonstration Grant for  
Areawide Planning*

PRINCIPAL INVESTIGATOR: Harry E. Palmer; Director, Hospital Planning and Construction; Oregon State Board of Health; Portland; activated May 1, 1962; completed June 30, 1963.

Proposal to organize and establish a representative planning council for hospitals and medical facilities for the Portland metropolitan area including the counties of Multnomah, Columbia, Clackamas, and Washington, in Oregon, and also to carry on initial exploratory and demonstration work in the field of interstate planning to include Clark County, Wash.

HM-00234

*Hawaii State Health Facilities Planning*

PRINCIPAL INVESTIGATOR: W. Glenn Ebersole; Executive Director, The Hospital Association of Hawaii, Inc.; Honolulu; activated May 1, 1962; completed Jan. 31, 1963.

Project to work toward the establishment of a statewide planning committee for hospitals and related facilities within the philosophy of areawide planning, as outlined by the American Hospital Association and the Public Health Service in their brochure "Areawide Planning for Hospitals and Related Facilities."

HM-00239

*Development of a Regional Hospital  
Planning Council*

PRINCIPAL INVESTIGATOR: Delbert L. Pugh; Executive Director, The Columbus Hospital Federation; Columbus, Ohio; activated Apr. 16, 1962; completion date: Mar. 31, 1965.

Study to establish and evaluate the principles of organization and administration of regional planning for hospitals and related health facilities through the development of a Prototype Regional Hospital Council to serve an approximate 29-county geographic area over a 3-year pilot period; to establish methods for collection, analysis, and dissemination of information about existing hospitals and related health facilities and utilization patterns; to review the present pattern of medical education

and training within the designated geographic area; to develop criteria to help establish priorities for renovation and construction of hospitals and related health facilities and necessary services; and to provide further guidelines for regional planning on a long-range basis.

HM-00240

*Pilot Study to Establish a Community  
Planning Agency*

PRINCIPAL INVESTIGATOR: Richard P. MacLeish; Executive Director, Colorado Hospital Association; Denver; activated May 1, 1962; completion date: Aug. 31, 1964.

Project to establish a permanent planning body, broadly representative of community interests, and adequately staffed and financed.

HM-00247

*Design of Research on Hospital  
and Health Care Needs*

PRINCIPAL INVESTIGATOR: Thomas B. Fitzpatrick; formerly Acting Director, Program and Bureau of Hospital Administration, University of Michigan; Ann Arbor, Mich.; presently Director of Research and Consulting, Blue Cross of Western Pennsylvania; Pittsburgh, Pa.; activated Sept. 1, 1962; completion date: Aug. 31, 1964.

Study for the formulation of a research design to comprehend the needs of communities for health care facilities and personnel. Factors to be considered are: Demographic, social, and economic characteristics of populations through a theoretical model expressing the structural relationship of these variables to the demand for health care services.

HM-00255

*Service Demonstration Hospital Planning*

PRINCIPAL INVESTIGATOR: Samuel S. Long; Executive Secretary, Hospital Planning Association of the Greater Toledo Area; Toledo, Ohio; activated May 1, 1962; completion date: June 30, 1964.

Major work of project is being devoted to the factfinding and datacollection processes. Data concerning the population and community characteristics are being developed. Data re-

lated to the hospital system itself, including the existing services and facilities, and information relating to the patient population in these institutions are being prepared.

HM-00259

*The Development of a Health Facilities Plan for the Washington Metropolitan Area*

PRINCIPAL INVESTIGATOR: Mrs. Kathryn H. Stone; Chairman, Metropolitan Washington Health Facility Planning Council; Washington, D.C.; activated June 1, 1962; completion date: May 31, 1966.

Project to investigate the availability and reliability of various types of resource data necessary to evaluate the current status of and future need for health facilities within the community; to investigate possible sources of financing for the organization and to enlist aid for continuing financial support; to develop the active interest in and support of the objectives of the Planning Council at all levels within the community; and to establish a liaison with the appropriate health agencies and related organizations in the various jurisdictions within the metropolitan area.

HM-00265

*Pilot Study to Establish a Regional Planning Agency*

PRINCIPAL INVESTIGATOR: Norman W. Spuehler; Planning Coordinator, Hospital Council of Southern California; Los Angeles, Calif.; activated July 1, 1962; completed June 30, 1963.

Pilot study to form an organization to demonstrate the value of regionwide planning by organizing eight local area planning committees or voluntary citizens' groups. Each group was asked to study the present availability of community health facilities and services by gathering information from various agencies and other sources in its respective area; to coordinate this information with the information of other appropriate voluntary and official agencies in the implementation of a local area and a regionwide health facilities and services plan; to evaluate all proposed health facility additions and deletions according to available planning information; and rec-

ommend approval, disapproval, or changes for all proposed health facility additions or deletions.

HM-00341

*Demonstrate Operation of Regional Planning Agency*

PRINCIPAL INVESTIGATOR: Norman W. Spuehler; Executive Director, Hospital Planning Association of Southern California; Los Angeles, Calif.; activated Jan. 1, 1964; completion date: Dec. 31, 1964.

On July 1, 1962, the Public Health Service awarded a "seed grant," HM-00265 to the Hospital Council of Southern California for the purpose of forming a separate and independent voluntary regional hospital planning agency for the Los Angeles metropolitan region. As a result of the above grant, the present organization was formed consisting of eight voluntary local area hospital planning committees comprising doctors of medicine, hospital administrators, and representatives of the lay public. Also a regionwide voluntary planning committee was established comprising primarily representatives of each local committee. The purpose of this grant application is to demonstrate the operational feasibility of this organization.

HM-00266

*Service Demonstration Project in Areawide Planning*

PRINCIPAL INVESTIGATORS: Ralph C. Parker, Jr., M.D.; Medical Director; and Ronald A. Jydstrup; Executive Director, Rochester Regional Hospital Council; Rochester, N.Y.; activated Sept. 1, 1962; completion date: Aug. 31, 1965.

A proposal to develop and assist in implementing over a 3-year period an areawide plan for the construction of hospitals and allied health facilities in an 11-county area of New York State.

HM-00283

*Areawide Planning in Smaller Communities*

PRINCIPAL INVESTIGATOR: Joseph R. Homminga, M.A.; Director, Hospital and Medical

Facilities Division, Michigan Department of Health; Lansing, Mich.; activated Feb. 1, 1963; completion date: Jan. 31, 1966.

Proposal to demonstrate in a smaller community the procedures for developing and implementing an areawide plan for the expansion of health facilities; to organize an agency for areawide planning; and to identify the sources of resistance to areawide planning and develop procedures for overcoming them.

HM-00288

*Indiana Planning of Hospitals  
and Allied Facilities*

PRINCIPAL INVESTIGATOR: Elton TeKolste, M.B.A.; Executive Director, Indiana Hospital Association; Indianapolis, Ind.; activated Jan. 1, 1963; completion date: Dec. 31, 1964.

Project designed to demonstrate the value of voluntary State and sub-State planning groups and to assist in developing, implementing, and coordinating community and areawide planning in construction and replacement of health facilities; to develop a program for the education of health personnel; and to develop the role of various sources of financing.

HM-00289

*Pilot Study to Establish Metropolitan Planning*

PRINCIPAL INVESTIGATOR: Robert L. Flynn, M.H.A.; Executive Secretary, Seattle Area Hospital Council; Seattle, Wash.; activated Jan. 1, 1963; completed Mar. 31, 1964.

Project to establish a permanent, autonomous, planning organization which will be broadly representative of the community and various professional and lay interests of hospitals and related health care facilities.

HM-00290

*Grant to Established Areawide Planning Agency*

PRINCIPAL INVESTIGATOR: J. William Martin; President, Charleston Studies Foundation, Inc.; Charleston, W. Va.; activated Jan. 1, 1963; completion date: Dec. 31, 1965.

Agency develops and implements areawide planning of hospitals and related health facilities serving metropolitan Charleston and the

surrounding six-county area, including engineering studies of structural and functional obsolescence of existing facilities.

HM-00291

*Health Facilities and Urban Sprawl*

PRINCIPAL INVESTIGATOR: David P. Willis, M.P.H.; Assistant Director, Hospital Planning Association of Allegheny County; Pittsburgh, Pa.; activated Dec. 1, 1962; completion date: Nov. 30, 1964.

A service demonstration project designed to (1) apply the principles of regional planning to a specific suburban area, (2) develop recommendations and participate in their implementation, (3) develop guidelines and a manual for application to other areas, (4) determine and demonstrate the factors relevant to delineating a community "health-service area" as part of a larger region, and (5) demonstrate and evaluate the role of local citizen participation.

HM-00292

*Pilot Study to Establish a County Planning Agency*

PRINCIPAL INVESTIGATOR: Louis M. Harper; Executive Secretary, Hospital Council of San Diego County; San Diego, Calif.; activated Dec. 1, 1962; completed Jan. 31, 1964.

Agency intended to be broadly representative of various professional and lay interests and to concern itself with the voluntary and orderly planning of coordinated health facilities and service systems for the county.

HM-00293

*Pilot Program to Establish a  
Regional Planning Agency*

PRINCIPAL INVESTIGATOR: Jon A. Ogden; Executive Director, Hospital Council of Northern California; San Francisco, Calif.; activated Feb. 1, 1963; completion date: June 30, 1964.

Organization intended to coordinate the voluntary planning efforts of local planning groups throughout the area and to demonstrate the value of regionwide planning by organizing a local planning committee or voluntary citizens group in each of the nine counties in the area.



HM-00294

*Health Facility Planning for Western New York*

PRINCIPAL INVESTIGATOR: William Engel; Executive Director, Hospital Review and Planning Council of Western New York, Inc.; Buffalo, N.Y.; activated Dec. 1, 1962; completion date: Nov. 30, 1965.

Project aims to (1) make a complete analysis of hospital financial information, (2) develop a system for reporting and analyzing hospital service data, (3) make a complete analysis of hospital plants and facilities, (4) study the balance in categories of services and facilities of area hospitals, (5) make a complete study of the quality of care being given in area hospitals, and (6) develop guidelines and procedures which will assist hospitals and health care facilities in this area to prepare plans for each institution that will reflect the true needs of the area.

HM-00295

*Pilot Study for Urban-Rural  
Regional Health Planning*

PRINCIPAL INVESTIGATOR: Arthur Jost; President, San Joaquin Valley Hospital Conference; Reedley, Calif.; activated Jan. 1, 1963; completion date: June 30, 1964.

Organization to establish a series of local subcommittees to (1) gather information on the present availability of community health facilities and services, (2) coordinate this information with that of other agencies in the area, (3) evaluate all proposed health facility additions and deletions for these local areas, and (4) recommend approval, disapproval, or changes.

HM-00297

*A Service Demonstration in Areawide Planning*

PRINCIPAL INVESTIGATOR: J. P. Houlihan; President, Health and Hospital Planning Council of Metropolitan Savannah, Inc.; Savannah, Ga.; activated May 1, 1963; completion date: Sept. 30, 1964.

Project seeking to resolve questions concerning areas of responsibilities, community representation, community support, long-term goals, and the like as they pertain to the functioning of a hospital planning council in a city-county area of 190,000.

HM-00303

*Experimental Center for Community  
Health Planning*

PRINCIPAL INVESTIGATOR: William A. Steiger, M.D.; Professor of Clinical Medicine, Department of Medicine, Temple University Medical Center; Philadelphia, Pa.; activated Sept. 1, 1963; completion date: Aug. 31, 1965.

Plan for constructing an experimental center for community health conducive to better organization for medical care. The facility would bring together, in one place, under the aegis of a university teaching hospital, many of the community health services now functioning in the area.

HM-00308

*A University's Responsibility to  
Community Hospitals*

PRINCIPAL INVESTIGATOR: Robert R. Cadmus, M.D.; Professor of Hospital Administration and Chairman, Department of Hospital Administration, School of Medicine, University of North Carolina; Chapel Hill, N.C.; activated Apr. 1, 1963; completion date: Mar. 31, 1966.

Program to demonstrate how a State university can assume a new responsibility toward community hospitals in much the same way that medical school extension services are provided to physicians in private practice.

HM-00312

*Hawaii Health Facilities Demonstration Report*

PRINCIPAL INVESTIGATOR: W. Glen Ebersole; Project Director, Hospital Association of Hawaii, Inc.; Honolulu, Hawaii; activated May 1, 1963; completion date: Apr. 30, 1966.

Grant to support a new health facilities planning council to assemble and analyze data necessary to a statewide plan.

HM-00313

*Project to Form a Health Facilities  
Planning Council*

PRINCIPAL INVESTIGATOR: Wilfred A. Poirier; Executive Director, Maine Hospital Association; Augusta, Maine; activated June 1, 1963; completion date: May 31, 1965.



The Council would determine the need for a permanent planning agency, enlist the active support of other interested health facilities and organizations, solicit cooperation of community leaders, and prepare a budget and plan for a second year of similar activity.

HM-00315

*Hospital Planning Council for  
Metropolitan Portland Area*

PRINCIPAL INVESTIGATOR: Richard M. Jones; Executive Director, Hospital Planning Council for the Metropolitan Portland Area; Portland, Oreg.; activated July 1, 1963; completion date: June 30, 1966.

Project to develop and demonstrate the value of areawide and interstate planning and to produce procedures and methodology for carrying out such planning.

HM-00316

*Areawide Planning for Birmingham and Vicinity*

PRINCIPAL INVESTIGATOR: John H. Carr; Executive Director, Jefferson County Coordination Council, Birmingham Area Health Facilities Planning Association, Inc.; Birmingham, Ala.; activated May 1, 1963; completion date: Apr. 30, 1966.

Project envisions the establishment, by a planning committee, of an office to continue the collection and analysis of data begun under an earlier contract, as well as the development of local financial support and a series of priorities for remodeling, renovation, and replacement programs.

HM-00317

*Establishing a Planning Agency for New Jersey*

PRINCIPAL INVESTIGATOR: Harold J. Johnston, B. Sc.; New Jersey Hospital Association; Trenton, N.J.; activated May 1, 1963; completion date: Apr. 30, 1964.

Seed grant to establish a statewide planning group for New Jersey.

HM-00336

*Health Facilities Planning for the Cincinnati Area*

PRINCIPAL INVESTIGATOR: Guy Thompson; Executive Director, Community Chest and

Council of the Cincinnati Area, Inc.; Cincinnati, Ohio; activated Sept. 1, 1963; completion date: Aug. 31, 1967.

Demonstration to show how an existing voluntary agency can provide effective areawide health planning in an eight-county metropolitan area in three States.

HM-00343

*A Study of the Regional Hospital Organization  
of Miners Hospital Association*

PRINCIPAL INVESTIGATOR: Sarah H. Knutti, M.D.; Associate Clinical Director, Miners Memorial Hospital Association; Washington, D.C.; activated July 1, 1963; completion date: Dec. 31, 1964.

Study to document operation of the unique regionally organized chain of hospitals of the MMHA and its centralized services, which, due to unavoidable economic influences, are being transferred to other sources of support. This historical record of the medical care program should offer much information of value to other planners and administrators of medical care programs.

HM-00351

*Demonstration Project of a Regional  
Planning Agency*

PRINCIPAL INVESTIGATOR: Derek W. Price, Executive Director, Hospital and Health Facility Planning Commission of San Diego County; San Diego, Calif.; activated Dec. 1, 1963; completion date: Nov. 30, 1964.

Project proposes to demonstrate that a voluntary planning group, broadly representative of various professional and lay interests, can effectively work cooperatively with other voluntary groups and governmental agencies concerned in the development and implementation of a long-range coordinated plan for hospitals and related health facilities and services in a rapidly growing region.

HM-00352

*Planning for Seattle Area Health Facilities*

PRINCIPAL INVESTIGATOR: Robert L. Flynn; Executive Director, Health Facilities Planning and Development Board, Inc.; Seattle, Wash.;

activated Jan. 1, 1964; completion date: Dec. 31, 1964.

Project proposes to further the development and implementation of areawide planning in the Seattle area by the utilization of detailed statistical analysis, public education, and the ultimate development of a plan for the area relating to the future provision of hospital and related health care facilities service to the community.

HM-00357

*Areawide Planning: Hospitals and Allied Facilities*

PRINCIPAL INVESTIGATOR: Robert W. Carithers; Executive Director, Metropolitan St. Louis Hospital Planning Commission, Inc.; St. Louis, Mo.; activated Jan. 1, 1964; completion date: Dec. 31, 1964.

Project proposes to demonstrate areawide planning for hospitals and related facilities by determining future hospitalization needs of the population in a metropolitan area and coordinating the development of facilities and services to meet those needs in the most effective manner and with the most prudent expenditure of funds for capital expansion.

## COOPERATIVE PLANNING

I-65

*Studies of Hospital Coordination*

PRINCIPAL INVESTIGATOR: Mark Blumberg, M.D.; Senior Health Economist, Stanford Research Institute; Palo Alto, Calif.; activated July 1963; completion date: June 1964.

To explore and document cooperative activities among hospitals and related groups directed at improved services, efficiency, and economy.

HM-00059

*Collaborative Research in Hospital Planning*

PRINCIPAL INVESTIGATOR: Madison B. Brown, M.D.; Hospital Research and Educational Trust; Chicago, Ill.; activated Mar. 1, 1957; completed June 31, 1962.

Project sponsored jointly by the Hospital Research and Educational Trust and the Amer-

ican Institute of Architects to establish a centralized collaborative program to initiate, coordinate, and conduct research needed to develop factual information about hospital functions and methods essential to improvement of hospital planning. The research organization provides the mechanism for a continued and progressive program of coordinated research in hospital planning.

HM-00064

*Coordination of Hospitals and Community Resources*

PRINCIPAL INVESTIGATOR: Franz Goldmann, M.D.; Project Director, Council of Jewish Federations and Welfare Funds; New York City; activated Sept. 1, 1956; completed Oct. 31, 1960.

Project designed to study in detail recent efforts to coordinate or integrate general hospitals with other medical and related community services such as chronic care institutions, homes for the aged, nursing homes, and family service agencies. Examples of this coordination range from informal agreements between institutions to the merger of several institutions into a common medical center administration.

*Publications:*

Goldmann, F. "A Profile: Residents of Homes for the Aged." *Geriatrics*, 15: 329-337, May 1960.

Goldmann, F., and Wilson, E. A. "A Study of Chronically Disabled Clients." *Social Casework*, 41: 354-360, July 1960.

Goldmann, F. "Medical Care of the Mentally Impaired in Homes for the Aged." *American Journal of Public Health*, 50: 1687-1694, November 1960.

Goldmann, F. "Nursing Service in Homes for the Aged." *Public Health Reports*, 75: 1124-1132, December 1960.

Goldmann, F. "A Profile: Patients in Chronic Disease Hospitals." *American Journal of Public Health*, 52: 646-655, April 1962.

Goldmann, F., and Fraenkel, M. "Patients on Home Care: Their Characteristics and Experience." *Journal of Chronic Disease*, 11: 77-87, January 1960.

Goldmann, F. "Personal Health Services in Homes for the Aged." *American Journal of Public Health*, 50: 1274-1287, September 1960.

Goldmann, F. "Prolonged Stay in General Hospitals: A Study of 200 Patients." *Geriatrics*, 14: 789-800, December 1959.

Goldmann, F. "What are Social Workers in General Hospitals Doing for Long-Term Patients?" *Social Work*, 5: 68-77, October 1960.

Morris, Robert. "Expansion of Cooperative Relationships Between Hospitals and Nursing Homes." *Public Health Reports*, 75: 1110-1114, December 1960.

Stern, Louis and others. *The Community Plans for its Chronically Ill and Aged*. New York, Council of Jewish Federations and Welfare Funds, Inc., 1962. 64 pp.

HM-00095

*Family Health Maintenance*

PRINCIPAL INVESTIGATOR: George A. Silver, M.D.; Chief, Division of Social Medicine, Montefiore Hospital; New York City; activated Jan. 1, 1958; completed May 31, 1960.

Project designed to gather certain cultural and socioeconomic information on family health maintenance from a study of 150 families and the same number of families in a control group.

*Publications:*

Cherkasky, M. *Family Health Maintenance Demonstration: Research in Public Health*. New York, Milbank Memorial Fund, 1952. 159 pp.

Freidson, E. "Specialties Without Roots: The Utilization of New Services." *Human Organization*, 18: 112-116, fall 1959.

Freidson, E., and Silver, G. *Patient's Views of Medical Practice*. New York, Russell Sage Foundation, 1961. 48 pp.

Freidson, E. and Silver, G. "Social Science in Family Medical Care." *Public Health Reports*, 75: 489-493, June 1960.

Schlossman, Howard H. "Transference in Medical Team-Family Research: The Family Health Maintenance Demonstration." *American Journal of Orthopsychiatry*, 31: 612-621, July 1961.

Shapiro, Irving. "Is Group Parent Education Worthwhile?" *Marriage and Family Living*, 18: 154-161, May 1956.

Silver, George A. "Beyond General Practice: The Health Team." *The Yale Journal of Biology and Medicine*, 31: 29-39, September 1958.

Silver, George A. *Family Health Maintenance*. Cambridge, Harvard University Press, 1963. 359 pp.

Silver, George A., and Stiber, C. "A Family Health Service as A Teaching Program." *Journal of Medical Education*, 33: 600-604, August 1958.

Silver, George A., and Stiber, C. "Family Health Maintenance: A Perspective on the Ailing Family." *The Family: A Focal Point in Health Education*, New York, New York Academy of Medicine, 1961. 20 pp.

Silver, George A., and Stiber, C. "The Social Worker and the Physician." *Journal of Medical Education*, 32: 324-330, May 1957.

HM-00108

*Relations of Anglo-Latino Groups with Hospitals*

PRINCIPAL INVESTIGATOR: Charles P. Loomis, Ph. D.; Professor, Department of Sociology and Anthropology, Michigan State University; East Lansing, Mich.; activated Jan. 1, 1958; completed Sept. 30, 1962.

Project to study the relations of minority groups with hospital personnel and hospital administration, operation, and planning.

*Publications:*

Beegle, J. Allan, and others. "Demographic Characteristics of the United States-Mexican Border." *Rural Sociology*, 25: 107-160, March 1960.

D'Antonio, William V., and others. "Institutional and Occupational Representations in Eleven Community Influence Systems." *American Sociological Review*, 26: 440-446, June 1961.

D'Antonio, William V., and Erickson, Eugene C. "The Reputational Technique as a Measure of Community Power." *American Sociological Review*, 27: 362-376, June 1962.

Dick, Harry R. "A Method for Ranking Community Influentials." *American Sociological Review*, 25: 395-398, June 1960.

Form, William H., and D'Antonio, William V. "Integration and Cleavage Among Community Influentials in Two Border Cities." *American Sociological Review*, 24: 804-814, December 1959.

Hanson, Robert C. "The Systemic Linkage Hypothesis and Role Consensus Patterns in Hospital-Community Relations." *American Sociological Review*, 27: 304-313, June 1962.

Redekop, Calvin, and Loomis, Charles P. "The Development of Status Roles in the Systemic Linkage Process." *Journal of Human Relations*, 8: 276-283, February 1960.

HM-00174

*Evolutional Methodology and Regional Coordination*

PRINCIPAL INVESTIGATOR: Robert C. Lowe, M.D.; Associate Professor, Department of Medicine and Preventive Medicine, University of Oklahoma, School of Medicine; Oklahoma City, Okla.; activated Sept. 1, 1960; completed Nov. 30, 1962.

Main objectives were to describe the existing patterns for medical and hospital services interacting within a rural, an intermediate, and a metropolitan area (primary center) including a university medical center; to study the influence of socioeconomic factors on the movement of patients seeking care and on referral to other areas within, or outside the study area; and to develop a survey method that could be applied throughout the State for periodic followup studies.

HM-00264

*Saint Paul Area Health Facilities Coordination Planning*

PRINCIPAL INVESTIGATOR: Isaac L. Hoffman; Director, Department of Research and Statistics, Metropolitan St. Paul Hospital Planning Council; St. Paul, Minn.; activated July 1, 1962; completion date: June 30, 1964.

Project to determine the effect of an active council in coordinating the planning and devel-

opment of hospital and related health care facilities and services at an optimum level of capacity, service quality, and economy of cost in relation to community needs and resources.

HM-00221

*Pilot Study for Health Center Services and Facilities*

PRINCIPAL INVESTIGATOR: Gunnar Fredericksen; Administrator, Minnesota Valley Memorial Hospital; LeSueur, Minn.; activated Jan. 1, 1963; completion date: Dec. 31, 1964.

Project to serve as a pilot in the fields of medical and hospital care, hospital administration, and related public services. It is designed to demonstrate those accomplishments which will lead to improving the quality and increasing the availability of hospital and medical care in a rural area.

HM-00013

*Integrated Hospital Service in West Tennessee*

PRINCIPAL INVESTIGATOR: O. W. Hyman, Ph. D.; Dean, College of Medicine, University of Tennessee; Memphis, Tenn.; activated Sept. 1, 1956; completed June 30, 1959.

Study demonstrated the increased value of services performed in an integrated hospital in west Tennessee.

HM-00017

*Quality of Medical, Hospital, and Related Health Services*

PRINCIPAL INVESTIGATOR: Ray E. Trussell, M.D.; Executive Officer, School of Public Health and Administrative Medicine, Columbia University; New York City; activated September 1956; completed February 1960.

Study group established in school to undertake long-term research with two main objectives: (a) To study quality of medical, hospital, and related services as they are influenced by different patterns of organizational and community relationships, and (b) to appraise the influence of new hospital construction in different community situations and the factors which contribute to or impede improvement in the quality of community health services.

*Publications:*

Maloney, Milton C., Trussell, Ray E., and Elinson, Jack. "Physicians Choose Medical Care: A Sociometric Approach to Quality Appraisal." *American Journal of Public Health*, 50: 1678-1686, November 1960.

Trussell, Ray E., and others. *Prepayment for Medical and Dental Care in New York State*. New York, Columbia University School of Public Health and Administrative Medicine, October 1962. 312 pp.

Trussell, Ray E., and Van Dyke, Frank. "Utilization of Routinely Available Information on Health Insurance Studies." *American Journal of Public Health*, 50: 1508-1520, October 1960.

## UTILIZATION PLANNING

I-63

*Research on Hospital Use—Conference*

Contract for joint action with American Hospital Association to explore research activities and other facets of hospital utilization.

*Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Conference on Research in Hospital Use*. PHS Publication No. 930-E-2. Washington, D.C., 20402, U.S. Government Printing Office, 1963. 148 pp.

HM-00011

*Prepaid Medical Care and Hospital Utilization*

PRINCIPAL INVESTIGATOR: Paul M. Densen, D. Sc.; Director, Division of Research and Statistics, Health Insurance Plan of Greater New York; New York City; activated Mar. 1, 1956; completed Sept. 30, 1959.

Study of two populations with prepaid insurance for hospital care in New York City and their use of hospitals in 1955: One with prepaid insurance for physician's care in the physician's office and at home as well, and one with hospitalization insurance only.

*Publications:*

Densen, P. M., Balamuth, E., and Shapiro, S. *Prepaid Medical Care and Hospital Utiliza-*

*tion*. Hospital Monograph Series No. 3. Chicago, American Hospital Association, 1958. 6 pp.

Densen, P. M., Jones, E. W., Balamuth, E., and Shapiro, S. "Prepaid Medical Care and Hospital Utilization in a Dual Choice Situation." *American Journal of Public Health*, 50: 1710-1726, November 1960.

Densen, P. M., Shapiro, S., Jones, E. W., and Baldinger, I. "Prepaid Medical Care and Hospital Utilization." *Hospitals*, 36: 62-68, 138, Nov. 16, 1962.

HM-00043

*Future Need for Hospital Facilities*

PRINCIPAL INVESTIGATOR: Alan E. Treloar, Ph. D.; American Hospital Association; Chicago, Ill.; activated Jan. 1, 1956; completed Feb. 28, 1959.

Project to evaluate the intensive activity of planning and building health facilities during the past decade, and to establish benchmarks for the future development of the Nation's health services in relation to hospitals. The W. K. Kellogg Foundation and the Public Health Service both supported this research project.

*Publications:*

Treloar, A. E., and Chill, D. "Ordered Definitions." *Hospitals*, 32: 42-46, 109-112, Nov. 1, 1958.

Treloar, A. E., and Chill, D. *Patient Care Facilities: Construction Needs and Hill-Burton Accomplishments*. Hospital Monograph Series No. 10. Chicago, American Hospital Association, 1961. 230 pp.

Treloar, A. E., and Chill, D. "Sense or Jabberwocky." *Hospitals*, 31: 34-36, 114, June 16, 1957.

HM-00141

*Factors Affecting Hospital Bed Occupancy Rates*

PRINCIPAL INVESTIGATOR: I. Oscar Weissman, M.D.; Research Associate, Hospital Council of Western Pennsylvania; Pittsburgh, Pa.; activated May 1, 1959; completion date: Nov. 30, 1964.

Study to identify and measure the factors which prevent a general hospital from operat-

ing at 100 percent bed capacity at all times and to analyze techniques for achieving the maximum occupancy in relation to effective service to patients and the community.

*Publications:*

London, Morris. "Are We Building Too Many Hospital Beds?" Part I, *The Modern Hospital*, 96: 59-63, January 1961.

London, Morris, and Sigmond, Robert M. Authors' Reply to Reader Opinion, "Are We Building Too Many Hospital Beds?" *The Modern Hospital*, 96: 6-10, April 1961.

London, Morris, and Sigmond, Robert M. "How Week Ends and Holidays Affect Occupancy." *The Modern Hospital*, 97: 79-83, August 1961.

London, Morris, and Sigmond, Robert M. "Small Specialized Bed Units Lower Hospital Occupancy." *The Modern Hospital*, 97: 95-100, May 1961.

HM-00194

*Hospital Utilization*

PRINCIPAL INVESTIGATOR: Gordon R. Cumming; Chief, Bureau of Hospitals, State of California, Department of Public Health; Berkeley, Calif.; activated Jan. 1, 1961; completion date: Sept. 30, 1964.

Project to develop a methodology for the regular collection, analysis, and use of precise information on hospital utilization on a state-wide basis.

HM-00209

*Hospital Utilization in a Major Metropolitan Area*

PRINCIPAL INVESTIGATOR: Rosson L. Cardwell; Associate Director and Director of Research, Hospital Planning Council for Metropolitan Chicago, Inc.; 79 West Monroe Street, Chicago, Ill.; activated Jan. 1, 1962; completed Dec. 31, 1963.

Project to measure hospital utilization of residents of a major metropolitan area; to compute differential rates of hospital utilization by subdivisions of the metropolitan area, and to correlate such differentials with various demographic, social, and economic characteris-

tics of the population of the subdivisions, as recorded in the Population Census of 1960.

HM-00349

*Analysis of Hospital Utilization Survey*

PRINCIPAL INVESTIGATOR: Paul B. Sheatsley; Senior Study Director and Eastern Representative, National Opinion Research Center, Chicago, Ill.; activated Jan. 1, 1964; completion date: Dec. 31, 1964.

Project seeks to complete analysis of the Massachusetts Hospital Study and to prepare a report in the Health Information Foundation Research Monograph Series. A major portion of the analysis will center on a study of the sequence of events and decisions leading to hospitalization with further exploration of previous preliminary findings that a significant number of patients are unnecessarily hospitalized.

HM-00296

*Value of Demographic and Social Data to Hospitals*

PRINCIPAL INVESTIGATOR: E. Gartly Jaco, Ph. D.; Associate Professor and Research Director, School of Public Health, University of Minnesota; Minneapolis, Minn.; activated Jan. 1, 1963; completion date: Dec. 31, 1964.

Study to demonstrate the value of demographic and socioeconomic data regarding patient populations to hospital administration and planning and to support this demonstration by assisting hospitals to develop methods of collecting these data at a minimum of cost and difficulty.

HM-00302

*The Demand for Medical Care Facilities*

PRINCIPAL INVESTIGATOR: Gerald D. Rosenthal, Ph. D.; Instructor in Economics, School of Public Health, Harvard University; Cambridge, Mass.; activated July 1, 1963; completion date: June 30, 1965.

Purpose of this study is to use economic methods in analyzing and estimating demand for medical care facilities. Attention is to be focused on population characteristics which influence demand for medical care facilities, changes in these characteristics over time, and

analyses of future demand for medical care facilities. It is believed the study will provide a basis for more definitive work to establish specific quantitative standards in the development of hospitals and related facilities in accordance with specific characteristics of a State or a community rather than through application of nationwide standards.

HM-00167

*Statistical Patterns of Demand for Hospital Services*

PRINCIPAL INVESTIGATOR: Charles D. Flagle, Ph. D.; Director, Operations Research, The Johns Hopkins Hospital; Baltimore, Md.; activated Dec. 1, 1959; completed Mar. 31, 1963.

Project to develop and test certain relationships which would be of general use to hospitals in designing and staffing outpatient facilities, and to develop similar analyses for inpatient facilities; to develop predictive theories when a degree of control is exerted through appointment systems.

*Publications:*

Soriano, Abraham. *A Comparative Study of Block and Individual Appointment Systems in the Outpatient Department, Wilmer Ophthalmological Clinic*. Baltimore, Operations Research Division, The Johns Hopkins Hospital, 1961. 65 pp.

Connor, Robert J. and others. "Effective Use of Nursing Resources—A Research Report." *Hospitals*, 35: 30-39, May 1, 1961.

I-66

*Hospital Prototypes Studies*

Contract with Louis Block Associates, Inc., Hospital Consultants, 8701 Georgia Avenue, Silver Spring, Md.; activated January 1963; completed September 1963.

A study to bring up to date and elaborate upon compilation of data concerning size, facilities, services, personnel, utilization, costs, and other factors pertaining to hospitals, for use in planning, organization, and administration.

I-67

*Long-Term Illness Planning*

Conference on planning for long-term care, with reference to research, studies, needs, utilization, and other factors. Jointly sponsored with American Hospital Association, 1963.

I-68

*Long-Term Illness Planning*

Joint conference with American Hospital Association and Jewish Hospital, St. Louis, Mo., to explore further the above area, 1964.

I-53

*Planning Facilities for Long-Term Care*

In cooperation with American Hospital Association to: (1) Survey and evaluate current patterns of providing long-term care and treatment, and (2) to develop recommendations and guidelines for use by national, State, and local groups for planning purposes.

*Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Areawide Planning of Facilities for Long-Term Treatment and Care*. (Report of the Joint Committee of the American Hospital Association and the Public Health Service.) PHS Publication No. 930-B-1. Washington, D.C., 20402, U.S. Government Printing Office, 1963. 80 pp. Price 55 cents.

I-51

*Study of Tuberculosis Hospitals*

To determine the changing needs for tuberculosis facilities throughout the Nation and to develop principles and recommendations for planning the future disposition or adaptation to other uses of beds no longer needed for the treatment of tuberculosis.

*Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Areawide*



*Planning of Facilities for Tuberculosis Services.* (Report of the Joint Committee of the National Tuberculosis Association and the Public Health Service.) PHS Publication No. 930-B-4. Washington, D.C., 20402, U.S. Government Printing Office, December 1963. 46 pp. Price 50 cents.

I-52

#### *Study of Rehabilitation Facilities*

A study to develop principles and guidelines for more effective planning of rehabilitation facilities.

#### *Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Area-wide Planning of Facilities for Rehabilitation Services.* (Report of the Joint Committee of the Public Health Service and the Vocational Rehabilitation Administration; Participating Agency: Association of Rehabilitation Centers, Inc.) PHS Publication No. 930-B-2. Washington, D.C., 20402, U.S. Government Printing Office, April 1963. 88 pp. Price 55 cents.

## DESIGN AND CONSTRUCTION

### HOSPITALS

HM-00005

#### *Architectural Study Project of American Psychiatric Association*

PRINCIPAL INVESTIGATOR: Lucy D. Ozarin, M.D.; Director, Mental Hospital Service, American Psychiatric Association; Washington, D.C.; activated January 1956; completed 1957 under Hospital and Medical Facilities program.

A study of mental hospital architecture; particularly, a survey of existing hospitals and a study in detail of the needs and requirements of the various services of mental hospitals.

HM-00053

#### *Hospital Facilities Utilization Study*

PRINCIPAL INVESTIGATOR: John D. Thompson; Research Associate, Department of Epidemiology and Public Health; and Robert B. Fetter; Associate Professor of Industrial Administration, Yale University; New Haven, Conn.; activated Jan. 1, 1956; completion date: Sept. 30, 1965.

Proposal to measure the effectiveness of hospital service as rendered in two hospital buildings of basically different vintage and design. This takes into consideration the utilization, operation, and administration of each of these adjacent units. Specific problems—such

as size of nursing units, relation of service units to patient areas, communication between nurse and patient, food service to patients, transportation, operating costs of teaching and nonteaching divisions—investigated and compared.

#### *Publications:*

Pelletier, Robert J., and Thompson, J. D. "Yale Index Measures Design Efficiency." *The Modern Hospital*, 95: 73-77, November 1960.

Thompson, J. D. "How Many Oxygen Outlets are Enough?" *The Modern Hospital*, 92: 116-122, January 1959.

Thompson, J. D. "Study of Two Recovery Rooms Offers Clues to Intensive Care Unit Design." *Hospitals*, 32: 35, 51-59, November 1, 1958.

Thompson, J. D. and others. "How Queuing Theory Works for the Hospital." *The Modern Hospital*, 94: 75-78, March 1960.

Thompson, J. D. and others. "Two Types of Tray Service Studied Side by Side." Parts I and II. *Hospitals*, 34: 82-88, Feb. 1, 1960; 34: 82-87, Feb. 16, 1960.

Thompson, J. D. and others. "Who Really Uses the Nurse-Patient Communication System?" *Hospitals*, 33: 40-44, 92, February 1, 1959.

Thompson, J. D., and Pelletier, R. J. "Privacy vs. Efficiency in the Inpatient Unit." *Hospitals*, 36: 53-62, Aug. 16, 1962.



HM-00170

*Basic Studies for Planning of the Operating Suite*

PRINCIPAL INVESTIGATOR: Robert H. Jacobs, Jr.; Architect, AIA, The New York Chapter of the American Institute of Architects; New York; activated June 1, 1960; completed May 31, 1963.

A program of research into basic functions and work procedures in the operating suite, and the architectural development of the suite based on a deeper understanding of these functions.

*Publications:*

Jacobs, Robert Hyde, Jr. "Surgical Suite Locker-Room Design and Procedure." *American Institute of Architects Journal*, 38: 83-86, September 1962.

Jacobs, Robert Hyde, Jr. "The Architect's Guide to Surgical Infection." *American Institute of Architects Journal*, 38: 75-85, August 1962.

Jacobs, Robert Hyde, Jr. "The Surgical Center—A Proposal for the Reorganization of the Surgical Service." *American Institute of Architects Journal*, 38: 79-87, November 1962.

HM-00223

*Comparative Studies of Hospital Design and Systems*

PRINCIPAL INVESTIGATOR: Dr. G. M. Needham; President, Rochester Methodist Hospital; Rochester, Minn.; activated July 1, 1962; completion date: tentative (construction project).

Research in hospital design and systems being conducted in a new hospital building that is planned to provide facilities for controlled investigations.

HM-00235

*Study for New Design Concept for a Children's Hospital*

PRINCIPAL INVESTIGATOR: Marshall Kreidbery, M.D.; Associate Professor of Pediatrics, Boston Floating Hospital; Boston, Mass.; activated July 1, 1962; completion date: June 30, 1964.

A study to determine what constitutes a good total health facility for children and their families. Research should lead to development of new design for children's hospital.

HM-00249

*Develop Methodology for Hospital Obsolescence Study*

PRINCIPAL INVESTIGATOR: Jacques Cousin; Executive Director, Greater Detroit Area Hospital Council, Inc.; Detroit, Mich.; activated July 1, 1962; completed June 30, 1963.

A five-phase study to develop and test a procedure for obtaining uniform information on hospitals' needs for modernization, renovation, replacement, relocation, expansion, or conversion.

I-43

*Film Development—Documentary Strip on Fallout-Protected Hospital*

Contract with Communicable Disease Center, Public Health Service, Atlanta, Ga., in cooperation with Ohio State agency to develop a documentary film incorporating the essential design features and factors influencing their selection for protecting a hospital against radiation.

I-57

*Measuring Hospital Obsolescence*

Contract with the Hospital Planning Council for Metropolitan Chicago, awarded June 1962, to test methods for evaluating hospital physical facilities to determine effectiveness in carrying out present functions, potential for expansion or remodeling to meet future needs, and criteria for modernization.

HM-00210

*Organization of the Elements of the Hospital Building*

PRINCIPAL INVESTIGATOR: Shelia C. Clibbon; Research Associate, Institute for Architectural Research, University of Pennsylvania; Philadelphia, Pa.; activated July 1, 1962; completion date: June 30, 1964.

Study to devise a system of the elements of the hospital building which will enable the more efficient utilization of personnel time and equipment, greater flexibility to accommodate changes of a temporary or permanent nature and improved safety and comfort for the patient leading to an elevation of the quality of care.

HM-00133

*Study of Specifications for Children's Hospital Units*

PRINCIPAL INVESTIGATOR: Joseph Stokes, Jr., M.D.; Professor of Pediatrics, School of Medicine, University of Pennsylvania; Philadelphia, Pa.; activated Aug. 1, 1958; completed July 31, 1963.

Project to develop a set of model specifications for the programs and facilities of children's medical centers affiliated with schools of medicine, as well as for nonacademic children's hospitals and pediatric areas of general hospitals.

HM-00232

*Demonstration Construction Project: Surgical Suite*

PRINCIPAL INVESTIGATOR: J. A. Franklin; Vice President and Treasurer, Indiana University Foundation Research Division; Bloomington, Ind.; activated July 1, 1962; completion date: tentative (construction project).

An experimental construction project to construct a surgical unit designed to conserve approximately 3,000 square feet of space over the conventional design of an eight-room suite and decrease the incidence of postoperative infection.

HM-00299

*The Formation of Design Criteria for Hospital Architecture*

PRINCIPAL INVESTIGATOR: Charles Moore, Ph. D.; Associate Professor and Chairman, Department of Architecture, University of California; Berkeley, Calif.; activated June 1, 1963; completion date: May 31, 1965.

Project analyses, in detail, of the internal activity of one key department of a hospital

(radiology department) in order to attempt to develop methods of analysis and research which, given specific objectives could provide the architect with a sounder basis for arriving at design decisions for more effective and efficient hospitals. The radiology department was selected because it provides, in capsule form, many of the problems encountered in the design of other hospital departments.

HM-00309

*Studies for a Surgical Center in a General Hospital*

PRINCIPAL INVESTIGATOR: Martin Cherkasky, M.D.; Director, Montefiore Hospital; New York 67, N.Y.; activated Sept. 1, 1963; completion date: Dec. 31, 1966.

Project to develop a surgical center consisting of a single integrated complex, housing preoperative nursing, operating, recovery, intensive care, and ambulatory surgical units in a multidisciplinary environment.

HM-00310

*Contruction of Experimental Private and Two-Bed Units*

PRINCIPAL INVESTIGATOR: Sister Gertrude of Providence; Hospital Administrator, Providence Hospital; Seattle 22, Wash.; activated July 1, 1963; completion date: June 30, 1964.

Project will assess the adequacy of an experimental nursing unit involving size of a single-bed unit and the unique arrangement of its furnishings.

HM-00154

*Studies of Lighting Needs for "Intensive Care" Nursing Units in Hospitals*

PRINCIPAL INVESTIGATOR: Ralph C. Williams, M.D.; Director, Division of Hospital Services, Georgia Department of Public Health; Atlanta, Ga.; activated Dec. 1, 1959; completed Nov. 30, 1960.

Project investigated the types and position of lighting fixtures to give the necessary intensity and quality of lighting required in the new "Intensive Care" areas of hospitals.

#### *Publications:*

Bush, L. Ralph. "Maintenance and Operation: How to Light the Intensive Care Unit." *The Modern Hospital*, 99: 132-136, August 1962.

Bush, L. Ralph. *Report of a Study on Lighting for Intensive Care Nursing Units of Hospitals*. Atlanta, Ga., Georgia Department of Public Health, 1961. 20 pp.

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Lighting For Hospital Patient Rooms*. PHS Publication No. 930-D-3. Washington, D.C., 20402, U.S. Government Printing Office, 1962. 37 pp.

## ENVIRONMENTAL ENGINEERING

I-61

### *Environmental Engineering Aspects of Hospitals and Medical Care Institutions*

From an administrative point of view, to analyze and document factors in this subject area and develop criteria for planning, organization, administration; for promoting conformance with voluntary and legal standards and for orientation and improvement in utilization of personnel, as they all relate to sanitation, safety, maintenance, and other environmental engineering aspects.

I-61 A—Studies, evaluation, and development of criteria and manuals by division staff, utilizing a committee of experts in an advisory capacity.

I-61 B—Contract with the School of Public Health, University of Minnesota being negotiated for fiscal year 1964, to compile, analyze, and evaluate needs and develop teaching materials for training of persons potentially and currently employed in hospital engineering.

I-21

### *Noise Control in Hospitals*

Architectural and Engineering Branch, Division of Hospital and Medical Facilities, U.S. Public Health Service, Silver Spring, Md., 20910.

Project to ascertain the character and intensity of hospital noises and their effect on patients and to develop criteria for their prevention or abatement.

#### *Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Noise in Hospitals*. PHS Publication No. 930-D-11. Washington, D.C., 20402, U.S. Government Printing Office, 1963. 130 pp.

I-41

### *Bacteria Retention Characteristics of Acoustical Materials*

Contract with Communicable Disease Center awarded March 1962.

Project to investigate and to test in laboratories and hospitals the quantity of bacteria in various acoustical materials and the various cleaning techniques utilizing bactericidal agents.

I-42

### *Utility Consumption and Space Requirements*

Architectural and Engineering Branch, Division of Hospital and Medical Facilities, U.S. Public Health Service, Silver Spring, Md., 20910.

Project to determine the actual consumption by hospitals of various utilities, the utilization of these utilities, automation in their operation, space requirements of the systems, maintenance force and facilities required to operate and service them.

I-39

### *Contamination of Hospital Environment by Linen Chutes*

Contract with University of Minnesota awarded March 1962; completed 1963.

Project to determine volumes of air needed to keep the air from flowing out of the linen chute, annular space needed to minimize piston action in chute, and spread of contamination.

I-48

### *Bacterial Contamination in Various Areas in Surgical Suites, Phase I*

Contract with the University of Minnesota, in cooperation with Communicable Di-

sease Center; completed 1962; report being developed. (See No. I-64.)

Project developed methodology to determine type, manner, and preventive and control measures for bacterial contamination in surgical suites.

I-64

*Bacterial Background of Surgical Suites,  
Phase II (See I-48 above.)*

Contract with University of Minnesota awarded February 15, 1963.

Using a sampling technique established under project No. I-48, above, 25 hospitals in the Twin City area will be visited so that authoritative information can be obtained as to the normal background contamination in the various areas of the surgical suite, i.e., corridors, doctor's lounge, dressing rooms, anesthesia readyroom, utility rooms, and instrument cleaning and sterilizing room.

I-45

*Fire and Explosion Hazards of Static Sparks in  
Oxygen Tents and Oxygen-Enriched Atmospheres*

Contract with Bureau of Mines awarded March 14, 1962; completed 1963.

Project determined possible explosion hazards in oxygen tents and fire hazards of cotton in oxygen-enriched atmospheres.

I-46

*Documentary Filmstrip on Plumbing in Hospitals*

Cooperative effort with Ohio State Agency.

Project to develop film for instructional purposes to identify and evaluate major problems on plumbing design, construction, and maintenance for hospitals.

I-58

*Study of Combustion Products as Related  
to Fire Safety in Buildings*

Contract with Southwest Research Institute; San Antonio, Tex.; awarded June 26, 1962; completed 1963.

Study to identify and analyze gases and combustion products in relation to toxicity, fire, and fire hazards in hospitals.

HM-00270

*Reduction of Operative Infection*

PRINCIPAL INVESTIGATOR: Devain N. Walcher, M.D.; Associate Professor of Pediatrics, School of Medicine, Indiana University; Bloomington, Ind.; activated Dec. 1, 1962; completion date: Nov. 30, 1967.

A three-phased project designed to study (1) the incidence of postoperative infections for specific operative procedures, (2) the incidence at present in the same operative suite with the advantage of ultraviolet lights and new masking techniques, and (3) the incidence of infection in the same operative procedures in a new surgical unit, designed to reduce the entry ways to a minimum and to provide for maximum control over all people entering the unit.

## NURSING EDUCATION FACILITIES

I-55

*Study of Nursing Education Facilities*

Staff, in cooperation with Nursing Division, National League for Nursing, et al., with use of advisory committee.

To explore and document programs and elements in nursing education and develop criteria for physical facilities, hospital- and non-hospital-based, for such programs.

*Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, *Nursing Education Facilities*. PHS Publication No. 1180-F-1b. Washington, D.C., 20402, U.S. Government Printing Office, 1964. 88 pp. 65 cents.

## NURSING HOMES

I-33

*Characteristics of Nursing Homes  
and Related Facilities*

U.S. Public Health Service, Program Evaluation and Reports Branch, Division of Hospital and Medical Facilities, Silver Spring, Md., 20910; activated 1961; completed 1962.

Study and analysis of data on nursing homes and related facilities for use in long-range planning for facilities for care of the elderly. Analyzed their availability to existing hospital facilities by metropolitan area, region, and State and correlated these with the distribution of the aging population.

*Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Characteristics of Nursing Homes and Related Facilities*. PHS Publication No. 930-F-5. Washington, D.C., 20402, U.S. Government Printing Office, 1963. 46 pp.

## ORGANIZATION AND ADMINISTRATION

### POLICIES AND GENERAL ORGANIZATION

HM-00046

*The Hospital and Its Community Relations*

PRINCIPAL INVESTIGATOR: Marion T. Lofton, Ph. D.; Associate Rural Sociologist, Mississippi State College; State College, Miss.; activated June 1, 1956; completed May 31, 1961.

Project studied the general hospital and its relationships with various types of publics. Among these publics are such groups as trustees, medical staff, hospital employees, patients, community agencies, and the general public, including key and prominent people who helped establish and develop the hospital. Study established standards for good hospital public relations.

*Publication:*

Saunders, J. D. V., and Bruening, J. H. *Mississippi Hospitals, 1957 Characteristics and Trends*. State College, Miss., Agricultural Experiment Station, Mississippi State University, Bulletin 564, August 1958. 5 pp.

Windham, Gerald O., and others. "What Shapes a Community's Attitude Toward a Hospital?" *Hospitals*, 35: 45-46, Dec. 1, 1962.

HM-00062

*Private Office Practice in Hospitals*

PRINCIPAL INVESTIGATOR: C. Rufus Rorem, Ph. D.; Executive Director, Hospital Council of Philadelphia, Pa.; activated May 1, 1956; completed Aug. 31, 1958.

A study of the organization, administration, and financial arrangements by which the hospital plant and equipment are used by physicians and dentists for office consultations, diagnoses, and treatment of private patients for a fee-for-service basis.

*Publications:*

*Doctor's Offices In Hospital-Financed Buildings*. Chicago, The Foundation for Management Research, Inc., 1958. 40 pp.

Rorem, C. R. "Physicians' Private Offices at Hospitals." *American Journal of Public Health*, 48: 874-879, July 1958.

Rorem, C. R. *Physicians' Private Offices at Hospitals*. Hospital Monograph Series No. 5. Chicago, American Hospital Association, 1958. 70 pp.

Rorem, C. R., and Laughlin, D. L. "Private Office Practice at Hospitals." *The Modern Hospital*, 88: 3-11, March 1957.

I-49

*Study of Factors Related to Patients' Choice of Hospital Accommodations*

U.S. Public Health Service, Intramural Research, Division of Hospital and Medical Facilities, Public Health Service; Silver Spring, Md., 20910; activated 1961; completed 1963. Not published.

A study for the benefit of hospital planners and administrators, not only of the distribution of patient room preferences, but the medical, economic, sociological, and psychological factors involved.

*Factors Influencing Physicians' Decisions  
Concerning Office Locations*

U.S. Public Health Service, Intramural Research, Division of Hospital and Medical Facilities, Silver Spring, Md., 20910; activated 1961; completed 1963. Not published.

For the use of hospital planners, to ascertain information concerning the following: (1) The physician's background, (2) current type of practice, (3) reasons for, and sources of influence on, his decision to practice in a given metropolitan area, and (4) reasons for, and sources of influence on, his choice of present office location.

*Joint Uniform Reporting of Hospital Statistics*  
(Not published)

Study to develop the methodology for a system of uniform reporting of basic health facility data. Information gathered to be used for normal requirements of State licensure and hospital planning, preparation of American Hospital Association Directory and statistical reporting, Public Health Service normal program needs, and emergency resource planning in civil defense.

*Development of a Program for Research in  
the Hospital and Related Fields*

PRINCIPAL INVESTIGATOR: John R. McGibony, M.D.; Director, Program in Hospital Administration, Graduate School of Public Health, University of Pittsburgh; presently Chief, Intramural Research, Division of Hospital and Medical Facilities, Public Health Service; Silver Spring, Md., 20910; activated June 1, 1956; completed Dec. 31, 1959.

Project explored, developed, and promoted a comprehensive program of research, study, and demonstrations in the field of hospital administration, operation, and utilization.

*A Study of Hospital Operations*

PRINCIPAL INVESTIGATOR: Thomas M. Hill; Associate Professor, School of Industrial

Management, Massachusetts Institute of Technology; Cambridge, Mass.; project carried out at Peter Bent Brigham Hospital; Boston, Mass.; activated Jan. 1, 1956; completed June 30, 1959.

Project discovered the extent to which efficiency of hospital operations can be increased by the application of managerial techniques effectively employed in industry.

*Hospital Administration Problems Study*

PRINCIPAL INVESTIGATOR: Floyd C. Mann, Ph. D.; Assistant Program Director, Institute for Social Research, University of Michigan; Ann Arbor, Mich.; activated Sept. 1, 1956; completed Mar. 31, 1961.

Study of hospital administration problems focusing upon supervisory and administrative practices; nature of motivation and job satisfactions among different personnel groups; patterns of coordination and integration; and objective measures of performance in relation to organizational effectiveness.

*Publication:*

Mann, Floyd C., and Georgopoulos, Basil S. *The Community General Hospital*. New York, The Macmillan Co., 1962. 693 pp.

*Study of Hospital Policies*

Contract with Dartmouth College, Hanover, N.H.; Professor Arthur Moss, Project Director; activated June 1962; completed fall 1963.

Study to explore and review pertinent literature in the broad field of hospital policies, to develop comprehensive annotated bibliography, to establish definitions, and to analyze and evaluate policies of hospitals.

*Hospital Elective Admission Scheduling  
Decision Rules*

PRINCIPAL INVESTIGATOR: Louis E. Davis; Professor of Industrial Engineering, University of California; Berkeley, Calif.; activated July 1, 1962; completion date: June 30, 1964.

Project to develop decision rule systems governing scheduling of elective admissions to voluntary acute general hospitals. System is expected to optimize service availability to community, hospital occupancy, and the relation between variability of occupancy and utilization of hospital's personnel, facilities, and services.

HM-00069

*A Comparative Study of Two  
Community Hospitals*

PRINCIPAL INVESTIGATOR: Ivan C. Belknap, Ph. D.; Associate Professor of Sociology, University of Texas; Austin, Tex.; activated June 1, 1956; completed Aug. 31, 1961.

A cooperative study of the development of general hospitals and related social organizations in two communities: one generally superior, the other generally inferior in hospital organization and services.

NOTE: This project was approved for 1 year. Application for continuation of funds was transferred to the National Institute of Mental Health. Project number under Mental Health is M 1452.

*Publication:*

Belknap, Ivan, and Steinle, John G. *The Community and Its Hospitals—A Comparative Analysis*. Austin, Tex., University of Texas, 1963. 235 pp.

HM-00138A

*Administration in the Small General Hospital*

PRINCIPAL INVESTIGATOR: Keith O. Taylor, Professor of Hospital Administration, School of Public Health, University of California; Berkeley, Calif.; activated Jan. 1, 1959; completed Dec. 31, 1959.

A pilot study to determine whether the small hospital provides material for research in the area of hospital administration.

HM-00190

*Economics and Administration of  
Medical Care Programs*

PRINCIPAL INVESTIGATOR: Mary Lee Ingbar, Ph. D.; Research Associate, Graduate

School of Public Administration, Harvard University; Cambridge, Mass.; activated May 1, 1961; completed Apr. 30, 1963.

A pilot study concerned with the application of the techniques of economic analysis to the administration and evaluation of programs of medical care.

IIM-00151

*Research Development in Hospital Administration*

PRINCIPAL INVESTIGATOR: Thomas B. Fitzpatrick; formerly Acting Director, Program in Hospital Administration, University of Michigan; Ann Arbor, Mich.; presently Director of Research and Consulting, Blue Cross of Western Pennsylvania; Pittsburgh, Pa.; activated Jan. 1, 1961; completed Dec. 31, 1961.

Project to plan research work to reflect the needs of the field for both well-documented data and theory formulation.

*Publication:*

Hess, Irene; Reidel, Donald; and Fitzpatrick, Thomas. *Probability Sampling of Hospitals and Patients*. Ann Arbor, Mich., University of Michigan, 1961. 81 pp.

HM-00145

*Performance Standards for Hospital  
Business Offices*

PRINCIPAL INVESTIGATOR: Harold Hindorfer; Director, Financial Management Services, The Catholic Hospital Association of the United States and Canada; St. Louis, Mo.; activated May 1, 1959; completed November 1962.

Study to establish standards of performance for accomplishing selected functions of the hospital business office.

HM-00037

*Research and Education Project in  
Methods Improvement*

PRINCIPAL INVESTIGATOR: Charles G. Roswell; Director, Hospital Services Division, United Hospital fund of New York; New York City; activated June 1, 1956; completed Feb. 29, 1960.

Project concerned with the application of methods improvement techniques; demonstra-



tion programs were undertaken in three metropolitan hospitals to identify the resistance and acceptance for such programs, to determine the most effective organizational patterns for such a program, and to demonstrate how the local hospital organization can promote the application of these programs.

*Publications:*

*Hospital Improvements Through Employee Participation.* New York, United Hospital Fund of New York, 1960. 178 pp.

*Training Course Material for Directors of Hospital Improvement Programs.* (Supplement to the Report, Hospital Improvements Through Employee Participation) New York, United Hospital Fund of New York, 1960. 180 pp.

HM-00192

*Study of Hospital Operations as a Complex System*

PRINCIPAL INVESTIGATOR: Glen D. Camp, Ph. D.; Professor of Operations Research, Case Institute of Technology; Cleveland, Ohio; activated Apr. 1, 1961; completed Mar. 31, 1963.

Project to generate new basic knowledge and models of the overall characteristics of the hospital as a system, and to find ways to maximize a hospital's effectiveness in reaching its objectives and in carrying out its mission.

## COST ANALYSIS AND ACCOUNTING

I-71

*Hospital Costs' Variance in Relation to Size*

Contract with American Hospital Association; July 1963.

To obtain and evaluate data on departmental and other cost factors in relation to size of hospital and to promote efficiency and economy in hospital services.

HM-00034

*Administrative Use of Accounting in Hospitals*

PRINCIPAL INVESTIGATOR: Harold Hinderer; Director, Financial Management Serv-

ices, The Catholic Hospital Association of the United States and Canada; St. Louis, Mo.; activated May 1, 1959; completed Nov. 1962.

Project for the development of a "Guide to Administrative Use of Accounting Data in Hospitals," designed for hospital administrators and students of hospital administration.

*Publication:*

*Guides to Hospital Administrative Planning and Control Through Accounting.* St. Louis, Mo., The Catholic Hospital Association of the United States and Canada, 1962. 57 pp.

HM-00227

*Billing Hospital Inpatients from the Medical Record*

PRINCIPAL INVESTIGATOR: Leroy E. Bates, M.D.; Director, the Union Memorial Hospital; Baltimore, Md.; activated Jan. 1, 1963; completion date: Mar. 31, 1964.

Project aims are to determine the feasibility of using the medical record to discover the chargeable services provided a hospital inpatient, and to determine the feasibility of using a remote data processing unit (the PAS) to prepare: (1) The patient's bill; (2) accounting records of inpatient income; (3) routine statistics reporting counts of diagnostic and treatment services rendered; and (4) special reports relating financial information and the utilization experience of professional departments in the hospital with diagnosis, surgical operation, length of stay, therapy, age, sex, and origin of payment.

HM-00326

*Use of Variable Cost Budgets in Managerial Control*

PRINCIPAL INVESTIGATOR: Roy E. Baker; Assistant Professor of Accounting, Cornell University; Ithaca, N.Y.; activated Sept. 1, 1963; completion date: Aug. 31, 1965.

Study proposes to investigate the nature of hospital costs in order to determine whether fixed, semivariable, and variable relationships exist between costs in hospitals and how these relationships may be used for establishing standard unit costs of service. With proper classification of cost factors, the hospital's accounting system and budgetary program can



provide significant data for managerial action in terms of measurement of performance and control of costs.

## AUTOMATION AND DATA PROCESSING

(Also see SERVICE: Pharmacy)

HM-00111

### *Economics of Automating Selected Hospital Activities*

PRINCIPAL INVESTIGATOR: Mark S. Blumberg, M.D.; Operations Analyst, Stanford Research Institute; Menlo Park, Calif.; activated May 1, 1959; completed Oct. 31, 1960.

Study to determine if automation can be applied to certain types of hospital activities with the object of reducing operating costs and/or improving the quality of professional services.

#### *Publications:*

Blumberg, Mark S., and Drew, Jacqueline. *Economic Feasibility of Automating Selected Hospital Activities*. Menlo Park, Calif., Stanford Research Institute, Mar. 13, 1961. 20 pp.

"Prospects for Automation in Handling Physicians' Medication Orders." *American Journal of Hospital Pharmacy*, 18: 567-570, September 1961.

Blumberg, Mark S. "Hospital Automation: The Needs and the Prospects." *Hospitals*, 35: 34-43, 99, Aug. 1, 1961.

HM-00164A

### *Study of the Feasibility of Automation in Hospitals*

PRINCIPAL INVESTIGATOR: Edward H. Noroian; Director of Administrative Research and Development, University Hospital; Baltimore, Md.; activated Dec. 1, 1959; completed Jan. 1, 1961.

Study designed to investigate the information needed to ascertain the most feasible method of approach to planning an automated hospital.

## I

### *Computer Systems in Hospitals*

Cooperative study with National Institutes of Health, Bethesda, Md., and Massachusetts General Hospital, activated 1963.

Study to ascertain the value of computers in increasing the speed and efficiency, as well as diminishing the cost, of certain hospital operations.

I-73

### *Effects of Data Processing on Hospital Costs*

A contract with Manchester (Conn.) Memorial Hospital to measure the impact on personnel requirements, wage and salary costs, and other operating costs through a data processing system, 1964-65.

HM-00282

### *Computer Models for Hospital Administration*

PRINCIPAL INVESTIGATOR: Leroy K. Young, M.D.; Assistant Professor of Clinical and Preventive Medicine, Sloan Institute of Hospital Administration, Cornell University; Ithaca, N.Y.; activated Dec. 1, 1962; completion date: Nov. 30, 1964.

Study to develop a computer model which will stimulate a hospital system and which will be used as a teaching machine in the training of hospital administrators.

HM-00300

### *Data Processing in a Medical Center*

PRINCIPAL INVESTIGATOR: Baldwin G. Lamson, M.D.; Associate Professor of Pathology, School of Medicine, University of California; Los Angeles, Calif.; activated Dec. 1, 1962; completion date: Nov. 30, 1965.

Proposal to develop computer programs to assist in the processing, reporting, classification, and retrieval of patient care medical information derived from the surgical pathology, autopsy, clinical laboratory, and cytology activities of the department staff. The long-term goal is a hospitalwide system of automated record-handling, storage, and retrieval.

HM-00307

*Data Automation Research and Experimentation*

PRINCIPAL INVESTIGATOR: Mr. Raymond B. Lake, Jr.; Assistant Administrator, Memorial Hospital of Long Beach; Long Beach, Calif.; activated Sept. 1, 1963; completion date: Aug. 31, 1965.

Project to investigate, through analytical and experimental means, methods for recording and communicating information in a modern short-term general hospital. Interest centers on the body of information relating to an individual patient.

HM-00365

*A System for Processing Clinical Research Data*

PRINCIPAL INVESTIGATOR: William A. Spencer, M.D.; Professor and Chairman, Department of Rehabilitation, Texas Medical Center, Baylor University College of Medicine; Houston, Tex.; activated Jan. 1, 1964; completion date: Dec. 31, 1964.

Project to organize an information handling system for collecting, processing, and retrieving clinical and laboratory research information from data obtained in the course of operation of the General Clinical Research Center for Chronic Diseases. The Center, recently established under a grant from the National Institutes of Health, has combined research design formulation and specialized instrumentation to provide a controlled data acquisition environment suitable for collection and preparation of input data, computer processing of data, report presentation and display of computer output data.

## PERSONNEL

I-44

*Studies of Hospital Personnel*

I-44A. Staff—To explore and stimulate research studies and demonstrations to improve hospital personnel action programs; to identify, document, and evaluate broad and specific facets of hospital personnel: education, qualifications, recruitment, policies, utilization costs, and other factors.

I-44B. Work Unit Measurement—Operations Research—to study and define a method-

ology for determining staffing requirements for dietetic, laundry, and pharmacy department functions in general hospitals. Contract under negotiation with University of Michigan; sponsored jointly with Bureau of Medical Services.

I-44C. Study of Personnel Turnover—Joint project with Division of Nursing and American Hospital Association. 1963.

I-44E. Staff—To explore with Washington Hospital Center, health education facets of personnel recruitment. 1963.

I-34

*Orientation and Procedural Manual Study*

Contract with Grant Hospital, Chicago, Ill.; activated 1960; completed January 1962.

Study to develop a program of employee training and supervisory procedures based on job analysis, evaluation, and accepted training techniques; and to plan for orientation and training of medical staff in progressive patient care technique.

HM-00117

*Study of Positions and Personnel in a General Hospital*

PRINCIPAL INVESTIGATOR: George K. Floro, Ph. D.; Instructor, Department of Sociology, Louisiana State University; Baton Rouge, La.; activated Jan. 1, 1958; completed Dec. 31, 1958.

Study of the organizational relationships in hospital administration; use of observational methods to study the positions, the individuals incumbent to these positions, and the behavior of these people in the performance of their duties.

*Publications:*

Floro, G. K. "How to Get the Most from Old Guard Employees." *Hospitals*, 32: 43-44, Oct. 16, 1958.

Floro, G. K. *The Doctor's Hospital*. Galveston, Tex., Southwestern Sociological Society, 1959. 13 pp.

HM-00007

*Project for Improving Hospital Personnel and Dietary Administration*

PRINCIPAL INVESTIGATOR: Stuart W. Knox; Executive Director, Connecticut Hospital Ad-

ministration; New Haven, Conn.; activated May 1, 1956; completed Aug. 31, 1959.

A demonstration project to show the contributions which a personnel specialist and dietary specialist can make to hospital operations through consultation services.

*Publications:*

Foster, J. T., and Hartman, J. "Check Sheet Helps Hospitals to Evaluate Dietary Operations." *Hospitals*, 33: 71-78, June 1, 1959.

Hartman, J., and Foster, J. T. "Dietary Consultant Helps with Planning." *The Modern Hospital*, 91: 132-138, November 1958.

HM-00090

*Developing Scientific Personnel Systems and Methods*

PRINCIPAL INVESTIGATOR: Sister Loretto Bernard; Administrator, St. Vincent's Hospital; New York, N.Y.; activated Apr. 1, 1957; completed Mar. 31, 1960.

Study to improve job efficiency and satisfaction of employees without increasing costs.

*Publication:*

*Personnel Systems and Developing Scientific Methods.* New York, St. Vincent's Hospital, 1960. 345 pp.

I-44D. Publication on hospital personnel problems, cooperative effort between Public Health Service and St. Vincent's Hospital for publication and dissemination of summary of the results of the extramural research project (HM-90) conducted by St. Vincent's Hospital.

HM-00123

*Social Causes of Labor Turnover in Modern Hospitals*

PRINCIPAL INVESTIGATOR: Llewellyn J. Gross, Ph. D.; Professor, Department of Sociology, University of Buffalo; Buffalo, N.Y.; activated Sept. 1, 1960; completion date: Aug. 31, 1964.

General objective is to investigate the cultural, social, psychological, and situational factors associated with labor turnover in a modern hospital.

HM-00186

*Role Conflict Resolution in Emergent and Stable Hospitals*

PRINCIPAL INVESTIGATOR: Thomas H. Holmes, M.D.; University of Washington, School of Medicine; Seattle, Wash.; activated Jan. 1, 1961; completed Dec. 31, 1963.

Project to compare the types, content, and intensity of the role conflicts which arise and the means of resolution which are used in an emergent organization and in a more stable one.

HM-00304

*Manpower and Industrial Relations in Hospitals*

PRINCIPAL INVESTIGATOR: Roy E. Penchansky, D.B.A.; School of Public Health, Harvard University; Cambridge, Mass.; activated Sept. 1, 1963; completion date: Aug. 31, 1965.

Project proposes a study of manpower and industrial relations in hospitals and the effects of changing labor practices. Among the products of the study will be the collection of data for a more definitive analysis of hospital manpower problems, and the hypotheses of development for which research projects can be designed.

HM-00244

*Improving Hospital Personnel Practices*

PRINCIPAL INVESTIGATOR: Rudolf J. Pendall; Executive Director, Hospital Council of Maryland, Inc.; Baltimore, Md.; activated Jan. 1, 1963; completion date: Dec. 31, 1965.

Project to demonstrate the benefits accruing to hospitals on a statewide basis from the establishment of a competently staffed personnel management service attached to the office of a State hospital association.

HM-00003

*Training Food Service Supervisors*

PRINCIPAL INVESTIGATOR: Ralph C. Williams, M.D.; Director, Division of Hospital Services, Georgia Department of Public Health; Atlanta, Ga.; activated Apr. 1, 1956; completed Mar. 31, 1961.

A demonstration project by a State health department and a State college to train qualified mature persons as food service supervisors.

*Publication:*

Wier, Nell, and Williams, Ralph C. "Food Service Supervisor Training—Evaluation of a State Sponsored Program." *Hospitals*, 34: 72-78, October 1, 1960.

HM-00027

*Development of Hospital Supervisory Training Program*

PRINCIPAL INVESTIGATOR: W. I. Christopher; Director, Hospital Personnel Services, The Catholic Hospital Association of the United States and Canada; St. Louis, Mo.; activated Feb. 15, 1956; completed Aug. 31, 1962.

Project reviewed literature on supervisory development training programs to be made available to those in the hospital field.

*Publications:*

Bird, Donald E., and Brandenburg, Earnest S. *Improving Communication Through Listening—Participant's Manual*. St. Louis, Mo., The Catholic Hospital Association of the United States and Canada, 1962. Approx. 300 pp.

Brandenburg, Earnest S., and Bird, Donald E. *Group Processes for Hospital Supervisors—Leader's Manual*. St. Louis, Mo., The Catholic Hospital Association of the United States and Canada, 1962. Approx. 300 pp.

Brandenburg, Earnest S., and Bird, Donald E. *Group Processes for Hospital Supervisors—Participant's Manual*. St. Louis, Mo., The Catholic Hospital Association of the United States and Canada, 1962. Approx. 300 pp.

Christopher, W. I. "Management Improvement." *Hospital Progress*, 43: 65-68, August 1962.

Christopher, W. I. "Project 1997—Training Needs for Hospital Supervisors." *Hospital Progress*, 42: 74-75, 101, November 1961.

Derick, B. F. *Supervisory Development for Hospitals—A Selected Annotated Bibliography*. St. Louis, Mo., The Catholic Hospital Association of the United States and Canada, 1957. Approx. 50 pp.

Maher, Trafford P. *Lest We Build on Sand*. St. Louis, Mo., The Catholic Hospital

Association of the United States and Canada, January 1962. 237 pp.

Shea, T. M., and Maher, T. P. *An Independent Evaluation of the Program—Improving Communications through Listening*. St. Louis, Mo., The Catholic Hospital Association of the United States and Canada, 1960. Approx. 100 pp.

HM-00067

*Preparation of Researchers in Hospital Services*

PRINCIPAL INVESTIGATOR: Rev. Robert J. Henle, S. J.; Dean, Graduate School, St. Louis University; St. Louis, Mo.; activated Sept. 1, 1956; completed June 30, 1962.

Development of a program to prepare mature persons with adequate background and experience to pursue research activity in hospital services and related areas.

*Publications:*

Henle, R. J. "The Intellectual Development of the Operationalist." *Hospital Progress*, 40: 86-91, May 1959.

Henle, R. J., and Kahler, C. *A Doctoral Program in Health Organization Research*. St. Louis, Mo., St. Louis University, June 1958. 136 pp.

Kahler, C., and Henle, R. J. *Experiment in Graduate Education: Assessment of a Doctoral Program in Health Organization Research*. St. Louis, Mo., St. Louis University, fall 1961. 107 pp.

HM-00089

*Study of Needs in Medical Technologist Training*

PRINCIPAL INVESTIGATOR: Frank B. Queen, M.D.; Professor of Pathology, University of Oregon, School of Medicine; Portland, Oreg.; activated Jan. 1, 1957; completed Mar. 31, 1959.

A working conference to consider and critically evaluate the needs in medical technology training and to develop a definitive plan for further factfinding and dissemination needed to meet the present problem.

*Publication:*

"Why Laboratory Standards are Substandard." *The Modern Hospital*, 88: 51-54, February 1957.

HM-00097

*Rehabilitation Training of  
County Hospital Personnel*

PRINCIPAL INVESTIGATOR: James W. Rae, Jr., M.D.; Associate Professor of Physical Medicine and Rehabilitation, University of Michigan; Ann Arbor, Mich.; activated Jan. 1, 1958; completed Mar. 31, 1961.

Project to develop methods for training hospital rehabilitation personnel, consultant services to participating agencies, and research in standards of measurement and evaluation of rehabilitation and related factors.

*Publications:*

Bloomer, H. H. "Communication Problems Among Aged County Hospital Patients." *Geriatrics*, 15: 291-295, April 1960.

Brandt, Ralph L. "Decreased Carbohydrate Tolerance in Elderly Patients." *Geriatrics*, 15: 315-325, April 1960.

Brandt, Ralph L., and Tupper, C. John. "Medical Appraisal of Elderly County Hospital Patients." *Geriatrics*, 15: 233-253, April 1960.

Currier, Robert D. "Neurologic Findings in County Hospital Patients." *Geriatrics*, 15: 254-262, April 1960.

DiNapoli, Adelmo and others. "Dental Conditions of County Hospital Patients." *Geriatrics*, 15: 306-314, April 1960.

Donahue, Wilma, and Rae, James W., Jr. "Design for a Study of Geriatric Rehabilitation." *Geriatrics*, 15: 229-232, April 1960.

HM-00115

*Education of Dietitians and Food Service Personnel*

PRINCIPAL INVESTIGATOR: Mary K. Bloetjes, Ph. D.; Professor and Head, Department of Institutional Management, New York State College of Home Economics at Cornell University; Ithaca, N.Y.; activated May 1, 1959; completed Oct. 31, 1961.

Study to analyze responsibilities that must be assumed and executed by the dietitian, to determine channels through which appropriate training for these responsibilities may be assured, and to decide methods through which training of personnel for delegated responsibilities might be provided.

*Publication:*

Bloetjes, Mary K.; Gottlieb, Regina; and Couch, Mary A. "A Study of Dietetic Training: I. Current Staffing Practices." *Journal of the American Dietetic Association*, 39: 32-34, July 1961.

HM-00135

*Training of Hospital Administrators*

PRINCIPAL INVESTIGATOR: James A. Hamilton; Director and Professor, Course in Hospital Administration, School of Public Health, University of Minnesota; Minneapolis, Minn.; activated Jan. 1, 1959; completed June 30, 1961.

Project to explore the possibility of developing an organized program of education for the training of research people in hospital administration.

HM-00187

*Nonacademic Education in Hospital  
Administration*

PRINCIPAL INVESTIGATOR: Ezra V. Saul, Ph. D.; Director, Institute for Applied Experimental Psychology, Tufts University; Medford, Mass.; activated Apr. 1, 1961; completed Aug. 31, 1962.

A preliminary study of the professional and educational programs of the New England Hospital Assembly (NEHA) to ascertain critical educational and communication procedures, and the relevance and availability of evaluation techniques pertinent to the educational objectives and instructional procedures of NEHA.

HM-00197

*Geriatrics Research and Curriculum Planning*

PRINCIPAL INVESTIGATOR: Gary Hansen; Mt. Angel College; Mount Angel, Oreg.; activated Jan. 1, 1961; completion date: Dec. 31, 1965.

Program to set up and establish a course of study in the field of gerontology on the undergraduate level. Purpose is to equip the potential social welfare worker or nursing home operator with the kind of knowledge, training, and philosophy needed to serve the aging segment of the population.

HM-00198

*Effective Utilization of Hospital  
Dietary Personnel*

PRINCIPAL INVESTIGATOR: Beatrice Donaldson, Ph. D.; Professor, Department of Foods and Nutrition, University of Wisconsin; Madison, Wis.; activated Sept. 1, 1961; completion date: Aug. 31, 1964.

A study of ways and means to improve patient care through more effective staffing, training, and scheduling of hospital dietary personnel to provide attractive, palatable, and nutritious meals.

HM-00215

*Demonstration of Paramedical Curricula  
Development*

PRINCIPAL INVESTIGATORS: Ralph C. Williams, M.D., and Willys R. Knight, Ph. D.; Georgia Department of Public Health; Atlanta,

Ga.; activated May 1, 1962; completed June 30, 1963.

A study of curriculum requirements in the field of hospital administration, medical technology, physical therapy, and occupational therapy. Present curricula in junior and senior colleges throughout the State studied to determine the practicability of adapting existing programs to meet current requirements and to ascertain the need for new programs in the paramedical field.

HM-00263

*Nursing Activities Study*

PRINCIPAL INVESTIGATOR: Minerva Mayberry; Special Project Nurse, New Jersey State Department of Health; Trenton, N.J.; activated Sept. 1, 1962; completed Nov. 30, 1963.

Project to complete analysis of data that has been collected on nursing activities and to study the feasibility of a statewide demonstration program using the same techniques.

## SERVICES

### PATIENT CARE

I-17

*Study of Progressive Patient Care  
in Several Types of Hospitals*

To ascertain and describe the patterns of Progressive Patient Care in: (a) Teaching hospitals, (b) hospitals with full-time paid staff, (c) hospitals with clinical departmentalization, and (d) small hospitals.

I-23

*Continuation of Study of Allocation of Beds  
to Units of a PPC Hospital*

Study to determine the proportion of the total capacity of a PPC hospital required for each of the various categories of patient needs; to determine the fraction of beds which must be interchangeable between categories to accommodate fluctuations in the number of patients in each category; and to develop a methodology which will permit any general

hospital to determine these fractions from its historical pattern of caseloads.

I-34

*Orientation and Procedural Manual  
Development Study*

Contract with Grant Hospital, Chicago, Ill.; activated 1960; completed January 1962.

Study to develop a program of employee training and supervisory procedures based on job analysis, evaluation, and accepted training techniques, and to plan for orientation and training of medical staff in progressive patient care technique.

I-35

*Patient Acceptance of Progressive Patient Care*

In cooperation with Dr. Howard Leventhal, Yale University; activated 1959; completed June 1963.

Study to explore patients' acceptance in PPC and in regular care institutions, with evaluations and comparisons.

I-36

*Impact of Progressive Patient Care on Care of Patients with Myocardial Infarction*

In cooperation with Manchester Memorial Hospital; activated 1960; completed April 1963.

Study to evaluate myocardial infarction to determine how PPC has facilitated the solution of medical and nursing care problems.

*Publication:*

Lockward, Howard J.; Lundberg, George A. F.; and Odoroff, M. A. "Effect of Intensive Care on Mortality Rate of Patients with Myocardial Infarcts." *Public Health Reports*, 78: 655-661, August 1963.

I-40

*Progressive Patient Care Bed Allocations*

Contract with the University of North Carolina, Chapel Hill, N.C.; activated 1961; completed 1962.

Project tested a method of estimating PPC bed requirements at a general hospital and conducted a bed-sample survey to determine the type of care actually needed by hospitalized patients.

*Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *The Progressive Patient Care Hospital—Estimating Bed Needs*. PHS Publication No. 930-C-2. Washington, D.C., 20402, U.S. Government Printing Office, 1963. 17 pp.

I-54

*Study of Self-Care Units in Progressive Patient Care*

A study to evaluate and establish criteria for self-care units, their programs, methods, value, staffing costs, and facilities as part of Progressive Patient Care.

I

*Film on Progressive Patient Care*

Contract with Communicable Disease Center to develop 35 mm. color, sound, motion picture on PPC, for demonstration, promotion,

and education in principles and procedures of PPC for improving hospital services.

HM-00026

*Administration and the Quality of Patient Care*

PRINCIPAL INVESTIGATOR: Walter J. McNerney; Director, Program in Hospital Administration, School of Business Administration, University of Michigan; Ann Arbor, Mich.; activated Sept. 1, 1956; completed June 30, 1960.

An exploratory study in hospitals to establish useful comparisons between patterns of management (organization, administration, and system) and patterns of patient care, and to study the changes that may occur in these variables.

HM-00188

*Coordination and Patient Care in Voluntary Hospitals*

PRINCIPAL INVESTIGATOR: Floyd C. Mann, Ph. D.; Program Director, Institute for Social Research, University of Michigan; Ann Arbor, Mich.; activated Apr. 1, 1961; completion date: Mar. 31, 1965.

National study of voluntary, short-stay general hospitals. The main purpose of the study is a thorough investigation of the relationship between internal coordination and associated social-psychological factors on one side, and patient care and organizational effectiveness on the other.

HM-00237

*Comparative International Study of Medical Care*

PRINCIPAL INVESTIGATOR: Osler L. Peterson, M.D.; Department of Preventive Medicine, Harvard Medical School; Boston, Mass.; activated July 1, 1962; completion date: June 30, 1965.

Study to document and explain the reasons for the differences and similarities in the level of health provision in United States, Great Britain, and Sweden. Factors being studied are: doctor/population ratios, number of hospital admissions, length of average hospital stay, income spent for medical care, and infant mortality.



HM-00298

*U.S. Survey—Use of Medical Care;  
Three Country Comparison*

PRINCIPAL INVESTIGATOR: Odin W. Anderson, Ph. D.; Research Director, Health Information Foundation, The University of Chicago; Chicago, Ill.; activated May 1, 1963; completion date: Apr. 30, 1966.

To implement phase I of the social survey described in HM-00237 and to develop basic comparative data as a basis for planning phases II and III. A survey of medical expenditures and use of health services will be conducted in the United States and coordinated with similar surveys in Great Britain and Sweden.

HM-00278

*The Organization of Long-Term Care  
in General Hospitals*

PRINCIPAL INVESTIGATOR: Doyle Kent Rice, Ph. D.; Executive Director, Medical Care Research Center, Washington University; St. Louis, Mo.; activated Dec. 1, 1962; completion date: Nov. 30, 1965.

Study to investigate organizational patterns for the care of the chronically ill in general hospitals; a survey to be made of a random stratified national sample of long-term care programs controlled by general hospitals, such as rehabilitation units, nursing homes, personal care homes, and units possessing mixed levels of care. Major objectives are to gather needed basic data in the area, to show the significant differences between types of long-term care programs in general hospitals, to study the mutual impact of long-term programs on the participating institutions, and to develop exploratory statistical measures for evaluating the programs.

HM 00319

*Influence of an Intern Resident Staff on the  
Quality of Private Patient Care*

PRINCIPAL INVESTIGATOR: John F. Stapleton, M.D.; Assistant Professor of Medicine, Department of Medicine, St. Vincent Hospital; Worcester, Mass.; activated Sept. 1, 1963; completion date: Aug. 31, 1964.

Proposal to compare the quality of private patient care with and without interns in the same nonuniversity community hospital with the same medical staff for both study situations.

HM-00322

*Application of a Method for Evaluating  
the Quality of Surgical Care*

PRINCIPAL INVESTIGATOR: Osler L. Peterson, M.D.; Department of Preventive Medicine, Harvard Medical School; Boston, Mass.; activated Aug. 1, 1963; completion date: July 31, 1965.

Proposal to test a methodology for examining and evaluating the quality of surgical care given patients in a sample of New England hospitals.

HM-00354

*Evaluating Quality of Care by  
Scientific Medical Audit*

PRINCIPAL INVESTIGATOR: Paul A. Lembcke, M.D.; Professor of Preventive Medicine and Public Health, School of Public Health, University of California; Los Angeles, Calif.; activated Feb. 1, 1964; completion date: Jan. 31, 1965.

Project proposes to set up standards and criteria for assessing quality of medical and surgical care and testing their feasibility. By applying and standardizing auditing techniques already developed, it is proposed to test methods which would be universally applicable.

HM-00044

*A Program of Patient Care—  
Its Organizational Structure*

PRINCIPAL INVESTIGATOR: Howard E. Wooden; Director of Educational Relations of Personnel, St. Mary's Hospital; Evansville, Ind.; activated Feb. 1, 1956; completed Apr. 30, 1960.

Study concerned with establishing a plan of patient care; setting up an organizational structure so that the plan of care might be effectively executed; and determining educational programs.



### Publications:

Engel, E. L. "Family-Centered Maternity Care: The Doctors' Viewpoint." *Hospital Progress*, 41: 94-99, June 1960.

"Family-Centered Maternity Care: A Panel Discusses the Maternity Program at St. Mary's Hospital." *Hospital Progress*, 41: 102-103, 155-159, July 1960.

Gable, R. W. "The Patient and the Organization Man." *Hospital Administration*, 4: 41-49, winter 1959.

Sister Elizabeth, D.C. "Family-Centered Maternity Care: Inaugurating the Family-Centered Plan." *Hospital Progress*, 41: 102-103, 162, May 1960.

Sister Mary Stella, D.C. "Family-Centered Maternity Care—How It Works." *Hospital Progress*, 41: 92-94, March 1960; 41: 70-72, April 1960.

Wooden, H. E. "Family-Centered Maternity Care: A Summary and Analysis of the Program." *Hospital Progress*, 41: 72-73, 126-127, August 1960.

Wooden, H. E. "Notes on a Patient Care Research Project." *Hospital Progress*, 31: 96-98, 182, August 1958.

Wooden, H. E. "Patient-Centered Cardiac Care." *Hospital Progress*, 39: 80-82, 134-135, December 1958.

Wooden, H. E. "Patient-Centered Hospital Bends in the Patient's Direction." *The Modern Hospital*, 95: 108-111, 164-165, September 1960.

Wooden, H. E. "The Hospital's Purpose is the Patient, But . . ." *The Modern Hospital*, 92: 90-96, January 1959.

Wooden, H. E. "The System May Come Ahead of the Patient." *The Modern Hospital*, 31: 99-104, September 1958.

HM-00049

### Demonstration for Improving Patient Care Services

PRINCIPAL INVESTIGATOR: Helen L. Knudsen, M.D.; Chief, Hospital Services Section, Minnesota Department of Health; Minneapolis, Minn.; activated Sept. 1, 1956; completed Mar. 31, 1962.

Program directed toward persons working in the specialized departments of nursing, dietetics, physical and occupational therapy, medical records, social service, X-ray and clinical laboratory departments to demonstrate the value of inservice training for improving the quality of patient care services, with special emphasis on rural area relationships.

### Publications:

Bujold, Mary; Knudsen, Helen; Harrison, William C.; and Wolcyn, Bernard. "Medical Records in Minnesota Hospitals." *Journal of the American Association of Medical Record Librarians*, 32: 193-212, October 1961.

Heinemann, R. I.; Bauer, H.; and Knudsen, H. L. "Design for Development of Medical Laboratories: Personnel and Practices." *American Journal of Medical Technology*, 25: 145-165, May-June 1959.

"Hospital Planning Head Urges Coordination." *Scope Weekly*, 4: 14, September 9, 1959.

Knudsen, Helen L. "Care of the Chronically Ill and Aged is a Job for the Community Hospital." *The Modern Hospital*, 94: 80, March 1960.

Krusen, F. H.; Knudsen, H. L.; Gehrke, A. W.; and Keenan, W. W. "The Minnesota Plan for Rehabilitation of the Handicapped." *Journal of the Lancet*, 79: 489-497, November 1959.

Lofquist, A. J., Knudsen, H. L., White, R. M., and Wolcyn, B. A. "The Dietary Department in a Small Hospital: Minnesota Survey Reveals a Challenge for Dietitians." *Journal of the American Dietetic Association*, 37: 32-37, July 1960.

Lundgaard, M. J., and others. "Survey of Nursing Anesthesia: Personnel, Policies and Procedures in Minnesota Hospitals, 1956-1957." *Journal of the American Association of Nurse Anesthetists*, Part I, 28: 161-174, June 1960; Part II, 28: 225-234, August 1960.

Sister M. Loretta, O.S.B. "How Group Supervision Works in the Medical Record Department." *Hospitals*, 32: 37-44, June 17, 1958.

Mimeographed quarterly reports which depict the progress of this project are available from the Minnesota Department of Health, Minneapolis, Minn.

M-00077

*ospital Maternity and Newborn  
fant Statistics*

PRINCIPAL INVESTIGATOR: Schuyler G. Kohl, M.D.; Associate Professor, Obstetrics and Gynecology, State University of New York; Brooklyn, N.Y. (Sponsor: The American College of Obstetricians and Gynecologists, Chicago, Ill.); activated May 1, 1959; completed Oct. 31, 1963.

Demonstration project to facilitate and simulate the effective production and use by hospitals of statistical information on their maternity and newborn infant services, and to promote a greater degree of comparability in statistical information obtained in different hospitals.

*ublications:*

Hall, J. Edward, and Kohl, Schuyler G. "Breech Presentation, A Study of 1,456 Cases." *American Journal of Obstetrics and Gynecology*, 72: 977-990, November 1956.

Hellman, L. M., and others. "Pitocin—55." *American Journal of Obstetrics and Gynecology*, 73: 507-517, March 1957.

Kohl, Schuyler G., and others. "The Harvard Community Obstetrical Study." *American Journal of Obstetrics and Gynecology*, 83: 1-889, April 1962.

M-00079

*valuation of Internal Medicine in Hospitals*

PRINCIPAL INVESTIGATOR: G. Karl Fenn, M.D.; Director, Study of Hospital Standards in Medicine, The American College of Physicians; Philadelphia, Pa.; activated Sept. 1, 1956; completed Apr. 30, 1960.

Research project to collect and analyze data on the practice of internal medicine in hospitals to provide minimum standards of quality and efficiency that will form basis for evaluating the practice of internal medicine in a same manner as for the other medical and surgical specialties.

*ublications:*

Blankenhorn, M. A. "Standards of Practice of Internal Medicine and Methods of Assessing the Quality of Practice in Hospitals."

*Annals of Internal Medicine*, 47: 367-374, August 1957.

Fenn, G. K. "Progress Report, Committee for the Study of Hospital Standards in Medicine." (Editorial) *Annals of Internal Medicine*, 49: 959-965, October 1958.

*Medical Care Appraisal Plan*. Philadelphia, Pa., American College of Physicians, December 1958. 5 pp.

"Standards of Practice of Internal Medicine, Methods of Judging Its Quality in Hospitals." (Editorial) *Annals of Internal Medicine*, 51: 1-11, October 1959.

HM-00120

*Study of Individual Patient Needs*

PRINCIPAL INVESTIGATOR: Morris W. Stroud, 3d, M.D.; Associate Director of Medical Services, Highland View Hospital; Cleveland, Ohio; activated Jan. 1, 1959; completion date: Mar. 31, 1964.

Study to evaluate the role of a hospital in the care of individuals suffering from severe chronic disease by periodic evaluation of the individual patient following discharge.

HM-00260

*The St. Vincent's Hospital  
Medical Care Demonstration*

PRINCIPAL INVESTIGATOR: William J. Grace, M.D.; Director of Medicine, St. Vincent's Hospital; New York, N.Y.; activated June 1, 1963; completion date: May 31, 1966.

Cooperative project between St. Vincent's Hospital and the Departments of Health and Welfare of the city of New York to develop a program for total and coordinated medical care for welfare patients at St. Vincent's Hospital to be used as a prototype for similar programs in other community hospitals.

## OUTPATIENT SERVICES

I-62

*Studies of Outpatient Services*

I-62A. Staff activities: Review of literature; publication of annotated bibliography;

to document facts, factors, and problems of outpatient facilities and services and promote improved areawide and local planning, organization, and services.

I-62B. Joint Conference with American Hospital Association, American College of Surgeons, and Hartford (Conn.) Hospital on Emergency Services.

I-62C. Analysis of data in American Medical Association Directory of Internships and Residencies as related to Outpatient Services. (Contract with Dr. Louis Block, Hospital Consultant, 8701 Georgia Avenue, Silver Spring, Md.)

I-62D. Compilation of Outpatient data in 28 metropolitan hospitals. (Philadelphia contract—fiscal year 1964.)

#### *Publications:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Hospital Emergency Service: Criteria for Organization*. PHS Publication No. 930-C-3. Washington, D.C., 20402, U.S. Government Printing Office, 1963. 12 pp.

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Hospital Outpatient Services*, Volume I: Selected References Annotated. PHS publication No. 930-G-7. Washington, D.C., 20402, U.S. Government Printing Office, 1963. 33 pp.

HM-00012

#### *Study of Major Factors Affecting Outpatient Services*

PRINCIPAL INVESTIGATOR: Henry J. Badst, M.D.; Chief, Home Medical Service, Massachusetts Memorial Hospital; Boston, Mass.; activated June 1, 1956; completed Aug. 31, 1959.

Research project to secure information which would provide a greater understanding of the current needs for outpatient services furnished by a voluntary general hospital affiliated with a university medical school.

HM-00063

#### *Studies in Outpatient Activities and Their Measurement*

PRINCIPAL INVESTIGATOR: Cecil G. Sheps, M.D.; Executive Director, Beth Israel Hospital; Boston, Mass.; activated June 1, 1956; completed July 31, 1962.

Study of outpatient service data directed toward the development of more meaningful measures of service rendered. Using a random stratified sample of the outpatients seen at this voluntary teaching hospital, an attempt was made to assess the role of outpatient departmental care in the total medical care of these patients.

#### *Publications:*

Lee, S. S. "A Fresh Look at Outpatient Department Problems." *Hospitals*, 32: 23-26, March 1, 1958.

Lee, S. S., and others. "How New Patterns of Medical Care Affect the Emergency Unit." *The Modern Hospital*, 94: 97-101, May 1960.

Solon, J. A., and others. "Delineating Patterns of Medical Care." *American Journal of Public Health*, 50: 1105-1113, August 1960.

Solon, J. A., and others. "Patterns of Medical Care: A Hospital's Outpatients." *American Journal of Public Health*, 50: 1905-1913, December 1960.

Solon, J. A., and others. "Patterns of Medical Care: Validity of Interview Information on Use of Hospital Clinics." *Journal of Health and Human Behavior*, 3: 21-29, spring 1962.

HM-00074

#### *Process of Patient Referral to University General Clinics*

PRINCIPAL INVESTIGATOR: T. Franklin Williams, M.D.; Instructor, School of Medicine, University of North Carolina; Chapel Hill, N.C.; activated Sept. 1, 1956; to be completed Jan. 31, 1967.

Study concerned with the whole process of patient referral to the general clinic of a university hospital located in a rural State;

directed toward developing a better understanding of the reasons for referral and the problems of the patient who is referred to a large university hospital outpatient service.

#### *Publications:*

Andrews, L. P., and others. "A Study of Patterns of Patient Referral to a Medical Clinic in a Rural State: Methodology." *American Journal of Public Health*, 49: 634-643, May 1959.

Huntley, Robert R., and others. "The Quality of Medical Care: Techniques and Investigation in the Outpatient Clinic." *Journal of Chronic Diseases*, 14: 630-642, December 1961.

Newell, David J., and others. "Use of Cohort Life Tables in Family Studies of Disease." *Journal of Chronic Diseases*, 13: 439-452, May 1961.

White, Kerr L., and others. "The Ecology of Medical Care." *New England Journal of Medicine*, 265: 885-891, Nov. 2, 1961.

Williams, T. Franklin, and others. "Patient Referral to a University Clinic: Patterns in a Rural State." *American Journal of Public Health*, 50: 1493-1507, October 1960.

Williams, T. Franklin, and others. "The Referral Process in Medical Care and the University Clinic's Role." *Journal of Medical Education*, 36: 899-907, August 1961.

HM-00098

#### *Analysis of Congestion in an Outpatient Clinic*

PRINCIPAL INVESTIGATOR: Charles D. Flagle, Ph. D.; Director of Operations Research, The Johns Hopkins Hospital; Baltimore, Md.; activated Jan. 1, 1958, completed Mar. 31, 1959.

Study to analyze traffic congestion in an outpatient clinic.

#### *Publication:*

Gabrielson, I. W. and others. *Analysis of Congestion in an Outpatient Clinic*. Baltimore, Md., Operations Research Division, Johns Hopkins Hospital, 1959. 66 pp.

HM-00159

#### *Studies in Outpatient Services: Attitudes and Functions*

PRINCIPAL INVESTIGATOR: Marvin B. Sussman, Ph. D.; Associate Professor of Sociology, Western Reserve University; Cleveland, Ohio; activated Feb. 1, 1960; completion date: Oct. 31, 1964.

Project proposes several studies of problems of outpatient department care which include studies of factors associated with patients' utilization of and attitudes toward outpatient services, and of physicians' conceptions of the treatment, teaching, and research functions of the clinics.

## DIETARY

(Also see Personnel)

HM-00216

#### *Linear Programing of Menu Planning in Hospitals*

PRINCIPAL INVESTIGATOR: Joseph L. Bantliff; Assistant Professor of Industrial Management, Tulane University, School of Business Administration; New Orleans, La.; activated May 1, 1962; completion date: June 30, 1964.

A primal linear programing model using the digital computer, covering several thousand nutrient vectors of purchased food items, satisfying dietary allowances at minimum cost. Another large set of nutrient vectors to be constructed from a variety of feasible menu-item combinations, satisfying daily menu requirements, and including aspects of the primal solution.

## PHARMACY

HM-00045

#### *Audit of Pharmaceutical Service in Hospitals*

PRINCIPAL INVESTIGATOR: Don E. Francke, Sc. D.; Director, Division of Hospital Pharmacy, American Pharmaceutical Association; Washington, D.C.; activated Jan. 1, 1956; completed Mar. 31, 1962.

Using the minimum standard now available in hospitals as basis for evaluating phar-

maceutical service; this study attempted to determine what constitutes good pharmaceutical service for patients in hospitals of varying sizes and types.

*Publication:*

Francke, Don E.; Latiolais, Clifton J.; Francke, Gloria; and Ho, Norman. *Mirror to Hospital Pharmacy*. Washington, D.C., American Society of Hospital Pharmacists, 1964. 244 pp.

HM-00323

*A Proposed Intrahospital Drug Distribution System*

PRINCIPAL INVESTIGATOR: William M. Heller, Ph. D.; Chief, Pharmacy Service, University of Arkansas Medical Center; Little Rock, Ark.; activated Dec. 1, 1963; completion date: Nov. 30, 1964.

Project will demonstrate an experimental method of drug distribution from a central pharmacy involving the use of electronic data processing equipment and employing a unit-dose dispensing system. Both the present, traditional system and the experimental system will be compared from the time the physician writes a prescription until the drug is administered to the patient. The goals include (1) reduction of medication error, (2) increasing nursing time available for bedside care of patients, (3) greater control over inventory of drugs, and (4) bringing all pharmaceutical function under the control of trained pharmacists.

HM-00328

*A Study of Patient Care Involving a Unit-Dose System*

PRINCIPAL INVESTIGATOR: William W. Tester, M.S.; Director of Hospital Pharmacy Services, University General Hospital, University of Iowa; Iowa City, Iowa; activated Jan. 1, 1964; completion date: Dec. 31, 1964.

Project to modify the conventional drug distribution system within a hospital to improve the safety and efficiency of medical transactions. A single pharmacy substation to be established near five nursing stations to be served in the first year. Under this experi-

mental system the medication order is given directly to the pharmacist by the physician with medications to be dispensed in unit doses. Primary objectives are (a) reduction of medication errors, (b) reduction of nursing time devoted to medication activities, (c) increased utilization of pharmacists in line with their training, (d) reduction of drug inventory, (e) greater control over drugs, (f) provision of a check by a pharmacist on prescriptions written by medical staff, and (g) evaluation of the system by medical, nursing, and pharmacy staffs.

## CENTRAL SERVICES

I-60

*Study of Hospital Central Services*

I-60A. Intramural Research, Division of Hospital and Medical Facilities, U.S. Public Health Service; Silver Spring, Md., 20910; activated July 1962.

To study, analyze, and evaluate central services in relation to planning, organization, and operation; to stimulate and promote continuing interest in such services as will make for efficiency, economy, and better patient care.

*Publication:*

U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Hospital and Medical Facilities. *Hospital Central Services, Volume I: A Survey of Current Literature*. PHS Publication No. 930-G-8, 1963. 27 pp.

I-60B. Contract with National Association of Central Service Personnel to obtain data through questionnaire, and to develop illustrated Procedures Manual. Contract awarded Apr. 1, 1963.

I-60C. Central Service Planning Manual being developed by staff.

HM-00028

*Hospital Supplies and Equipment Safety Checklist*

PRINCIPAL INVESTIGATOR: M. R. Kneifl; Executive Secretary, The Catholic Hospital Association of the United States and Canada;

St. Louis, Mo.; activated Feb. 15, 1956; completed Aug. 31, 1956.

Project developed a checklist of all hospital operating supplies (excluding pharmaceuticals and medicines) and equipment which possess accident hazard possibilities as a ready guide to hospital purchasing agents and personnel who must be constantly on the alert to safety hazards.

*Publication:*

Heeb, J. A. *Hospital Supplies and Equipment Safety Checklist*. St. Louis, Mo., The Catholic Hospital Association of the United States and Canada, 1957, 50 pp.

HM-00181

*Establishment of Supply Consumption Criteria*

PRINCIPAL INVESTIGATOR: Edward H. Noroian; Director of Administrative Research and Development, University Hospital; Baltimore, Md.; activated Sept. 1, 1960; completed Aug. 31, 1963.

Project established criteria to permit nursing units to be supplied by nonnursing personnel and ascertained what savings in cost resulted when the supply system was governed by patient condition under the control of supply-oriented personnel.

## HOUSEKEEPING AND LAUNDRY

(Also see Environmental Engineering)

HM-00180

*Use of Teams in a Housekeeping Department*

PRINCIPAL INVESTIGATOR: Edith M. Lentz, Ph. D.; Associate Professor, University of Minnesota; Minneapolis, Minn.; activated Apr. 1, 1961; completed Aug. 31, 1963.

Study to assess the value and effectiveness of the use of teams in a hospital housekeeping department.

## MEDICAL RECORDS

HM-00061

*A Comparison of Indexing Systems for Medical Records*

PRINCIPAL INVESTIGATOR: J. R. Anderson, M.D.; Assistant Secretary, Council on Professional Practice, American Hospital Association; Chicago, Ill.; activated June 1, 1956; completed Jan. 31, 1959.

Project to determine which of two coding systems (International Statistical Classification of Diseases, Injuries, and Causes of Death or Standard Nomenclature of Diseases and Operations) furnishes most easily and economically the greatest number of pertinent medical records.

*Publication:*

*Efficiency in Hospital Indexing of the Coding Systems of the International Statistical Classification and Standard Nomenclature of Diseases and Operations*. Chicago, Ill., The American Hospital Association, March 1959. Approx. 50 pp.

HM-00066

*Medical Records for Chronic Disease Hospitals*

PRINCIPAL INVESTIGATOR: Marjorie R. Quandt, C.R.L.; Educational Director, American Association of Medical Record Librarians; Chicago, Ill.; activated Apr. 1, 1956; completed Mar. 31, 1958.

Formation of a 5-day workshop to permit interested health agencies to discuss the need for medical records and reports in chronic disease institutions, and to define terms common to these facilities.

*Publication:*

*Proceedings of the Workshop on Standards and Procedures for Medical Records and Reports in Chronic Disease Hospitals*. Chicago, Ill., The American Association of Medical Record Librarians, November 1956. 25 pp.

## LABORATORY

HM-00076

### *Nationwide Blood-Banking Survey*

PRINCIPAL INVESTIGATOR: Frank E. Wilson, M.D.; Executive Vice President, Joint Blood Council, Inc.; Washington, D.C.; activated Mar. 1, 1957; completed June 30, 1960.

Study to develop a glossary of terms and definitions for use by all groups in the blood-banking field to provide a standard nomenclature, and to develop standards to be used for blood-bank accreditation.

#### *Publications:*

"Blood Transfusions in the United States." (Special Article.) *Journal of the American Medical Association*, 165: 1135-1141, Nov. 2, 1957.

*Directory of Blood Transfusion Facilities and Services.* Washington, D.C., Joint Blood Council, Inc., 1958. 97 pp. (Revised in 1960, 203 pp.)

*Standards for a Blood Transfusion Service.* Washington, D.C., Joint Blood Council, Inc., 1958. 19 pp. (A second edition appeared in 1960.)

*The Nation's Blood Transfusion Facilities and Services.* Washington, D.C., Joint Blood Council, Inc., 1960. 59 pp.

HM-00305

### *A Relative Value Determination for Laboratory Tests*

PRINCIPAL INVESTIGATOR: Paul M. Wallack, Ph. D.; Assistant Professor of Industrial Engineering, Kansas State University; Manhattan, Kan.; activated June 1, 1963; completion date: May 31, 1964.

Research is exploratory in nature with the purpose of determining the utility of standard job evaluation procedures in the determination of a test relative value schedule for the pathology laboratory of a hospital.

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